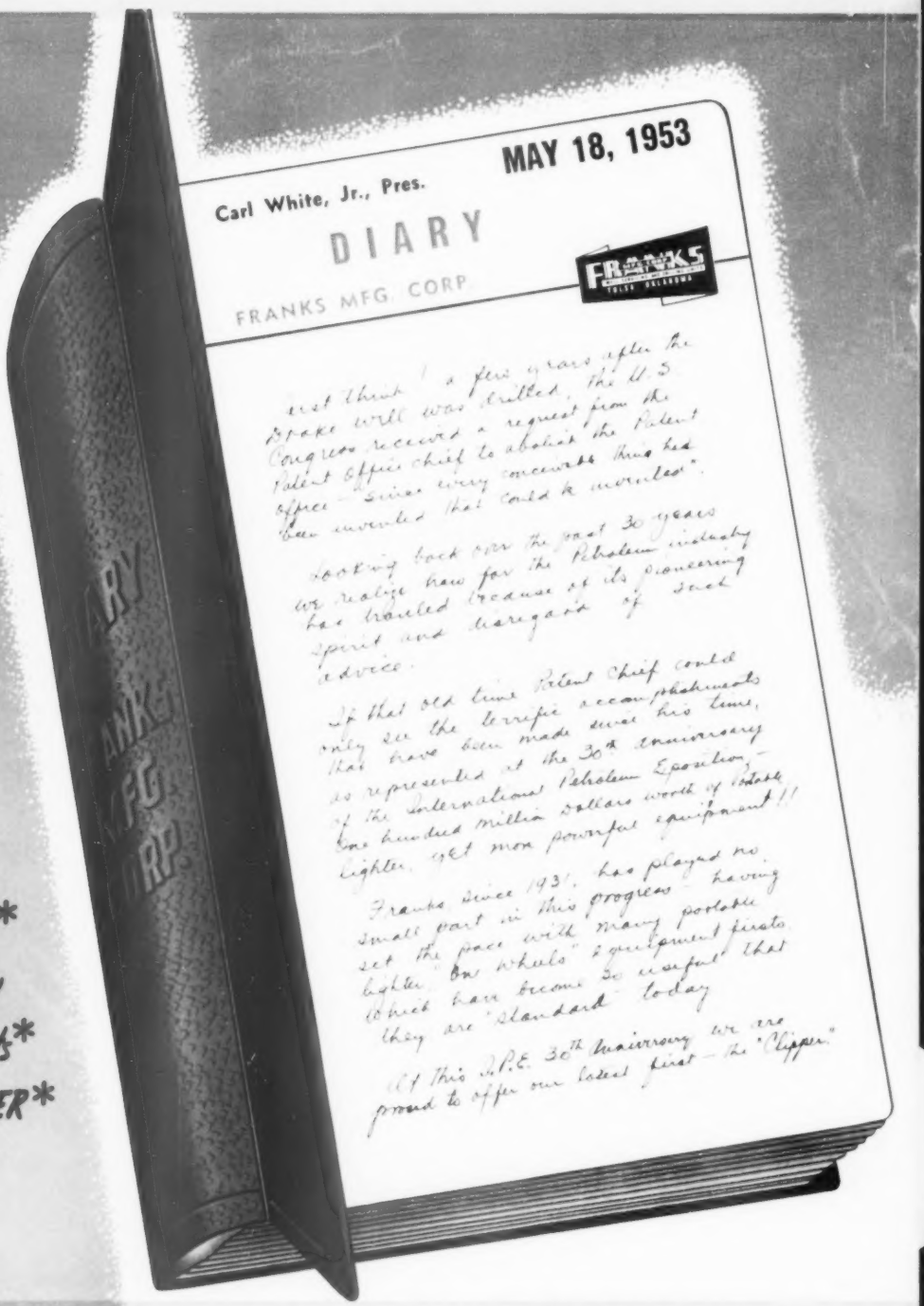
the I.P.E. ISSUE NO. 1
WITH INSERT MAP AND EXHIBIT DIRECTORY

OIL AND GAS JOURNAL

PROGRESS SINCE FIRST OIL SHOW

Steam Cable Tools
Steam Rotary Rigs
Stationary Steel Derricks
Bullhead Well Maintenance
Tractor Well Servicing
Single Pole Masts
Double Pole Masts
*Truck Mounted Pulling Units**
*Power Take-off Pulling Units**
*Power Take-off Drilling Rigs**
*Portable Boom Raised Derricks**
*Portable Telescoping Derricks**
*Console (Telemeter) Remote Controls**
*Hydraulically Equalized Brakes and Clutches on Drilling and Servicing Units**
*Self Propelled 4-Axle Well Servicing and Drilling Units**
*FRANKS New CLIPPER**

* FRANKS "FIRSTS"



Features you will like in —

ROCKWELL "201" ORIFICE METERS

LEAKPROOF STUFFING BOX

Has combination bearing and packing made of Teflon. All other parts are of stainless steel. The higher the pressure the tighter the seal, yet Teflon seals without binding and requires no maintenance.

INTERCHANGEABLE HIGH SIDE CHAMBERS

The unit manometer construction permits you to interchange high side chambers easily and adapt any range meter to higher or lower differential requirements. This construction saves stocking spare meters.

ROCKWELL CHART DRIVE

Hermetically sealed. Runs 8 days with one winding. Chart arbor turns once in 24 hours. Turret converters permit chart rotation rate to be changed at will.

STAINLESS PEN ARMS— MICROMETER ADJUSTMENT

The corrosion resistant pen arms are painted different colors for ready identification. A simple micrometer adjustment is provided for zero setting.

SERVICE CONVENIENCE

Your field men appreciate the extra strong construction—the simplified arrangement of parts—the clean records left by the positive inking pens—the ease with which the meter can be serviced with ordinary tools.

Write for bulletin 1050

Battery of six Rockwell orifice meters measuring gas served to compressors in gasoline plant.

THE ROCKWELL INTEGRATOR

Mechanically calculates up to 300 average charts a day with instrument accurate precision. Produces a verified record of results. Accuracy to within ½ of 1 per cent is practical. Described in bulletin 1016.

ROCKWELL

You Can RELY ON ROCKWELL

ROCKWELL MANUFACTURING COMPANY

PITTSBURGH 8, PA. Atlanta Boston Chicago Houston Kansas City
Los Angeles New York Pittsburgh San Francisco Seattle Tulsa

the OIL AND GAS JOURNAL

MAY 18, 1953 VOL. 52 NO. 2

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NEXT WEEK . . .

The Journal's second big International Petroleum Exposition number. In this issue Journal staff writers and other authors will show the importance of equipment in the various divisions of the oil industry.

Of particular interest are four special articles on field processing of oil and gas. Oil and gas processing starts at the well head; and these streams have undergone a number of processing steps by the time they reach the refinery or chemical plant.

In Brief . . .

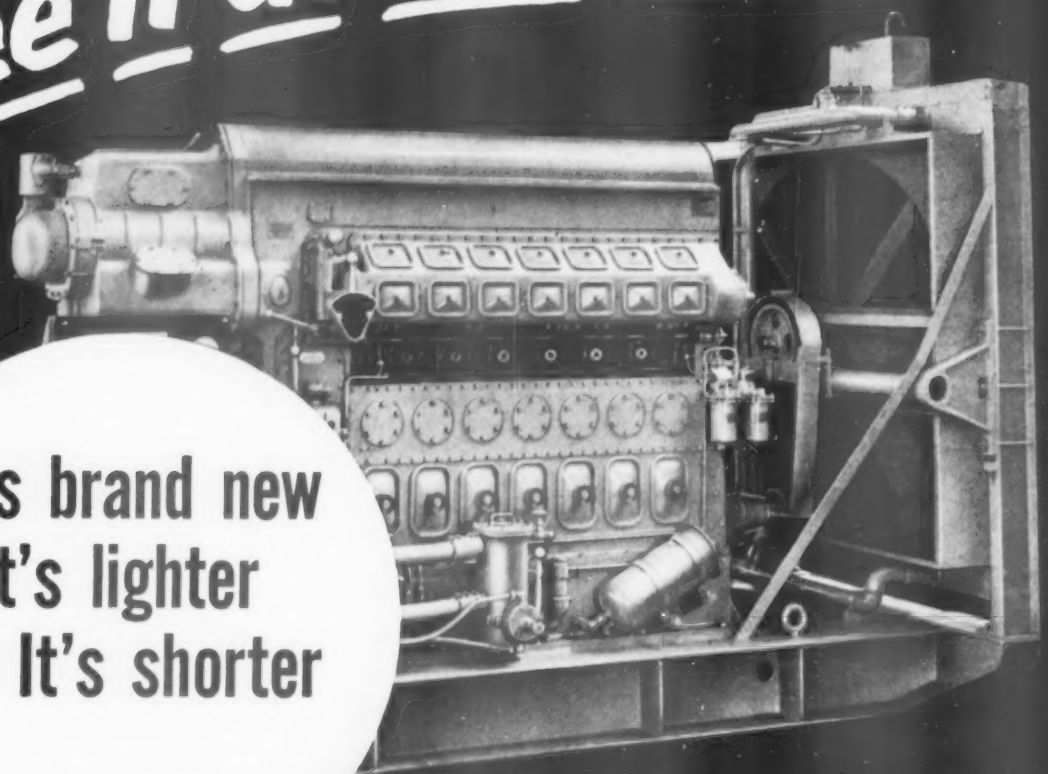
1. BETTER EQUIPMENT . . . Equipment performance counts in petroleum operations because it is a round-the-clock industry and because the industry is ever on the alert for ways and means of speeding up, saving costs, and doing the job better. Maintenance required for good equipment is much less than that required for poor equipment. Fewer inspections are required, smaller stocks of replacements are needed, and well-equipped operations make for safer operations. This article reviews equipment needs in the four main branches of the great petroleum business, and explains why the industry is so equipment minded.

2. MORE EQUIPMENT . . . All industry in the United States plans to spend about a half billion dollars more for new equipment in 1953 than in 1952, and more than half of this gain will be within the oil and gas industry. So states this article by the Journal's economics editor, who goes on to report that total domestic capital investments by the petroleum industry this year will be a little more than 4 billion dollars, for a gain of about $380,000,000 over 1952. There has been one fundamental reason for the phenomenal growth of the petroleum industry—it was able to supply energy in a very convenient and usable form at low prices during the period when our expanding economy needed more power per worker to increase the output per man.

3. HOW TO READ BETTER . . . This week we give you three articles on the subject of better reading. How to improve reading habits and efficiencies of adults is receiving attention in many places. If an executive spends 2 to 3 hours daily just reading, it is easily seen how he became more valuable if he is able to cut this time in half, or use the time saved to get more reading done. Reading laboratories are being established to teach better reading. And there are specialized techniques for handling various special types of material, like business letters or technical articles, which enormously cut the time of reading while increasing the reader's grasp of the material.

4. WHO'S WHO AND WHERE . . . Nearly 80 pages of this issue give you the names of all exhibitors at the International Petroleum Exposition, who will be on hand to greet visitors, and what there will be to see at the hundreds of exhibits. This feature has been long in preparation, and with the multicolor map which is included as an insert in every issue, the exposition visitor should be able to seek out the things he wants to see with a minimum of waste effort.

See it at the show!



It's brand new
It's lighter
It's shorter

... a new Fairbanks-Morse Diesel for drilling service!

This compact power package is a new Fairbanks-Morse Opposed Piston Diesel—designed for *continuous* heavy-duty drilling service. All steel construction makes it 20% lighter and 20% shorter than engines of comparable speed and horsepower ratings and assures greater rigidity and shock resistance.

You get a drilling service range from 330 to 825 horsepower from this 2-cycle Fairbanks-Morse Model 38F5¼ Diesel. Its unique opposed-piston design means fewer parts to wear, maintain and replace. Be sure to see it at the show!

Fairbanks, Morse & Co., Chicago 5, Illinois.

FAIRBANKS-MORSE

a name worth remembering when you want the best

OIL FIELD EQUIPMENT • PUMPS • SCALES • ELECTRIC MOTORS • GENERATORS • LIGHT PLANTS • DIESEL, DUAL FUEL & GASOLINE ENGINES • MAGNETOS • DIESEL LOCOMOTIVES

WITH
OIL MEN

PERFORMANCE COMES FIRST

IT PAYS YOU
TO USE

McEvoy
EQUIPMENT

McEvoy COMPANY

TEXAS AT MILBY
P.O. BOX 3127, HOUSTON, TEXAS
Established 1906

MANUFACTURERS
OF THE WORLD'S
TIGHTEST VALVE

USE YOUR McEvoy
SALES ENGINEER.
HE KNOWS
YOUR PROBLEMS.

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Kansas Building
International Petroleum
Exposition—
May 14 - 23, 1953

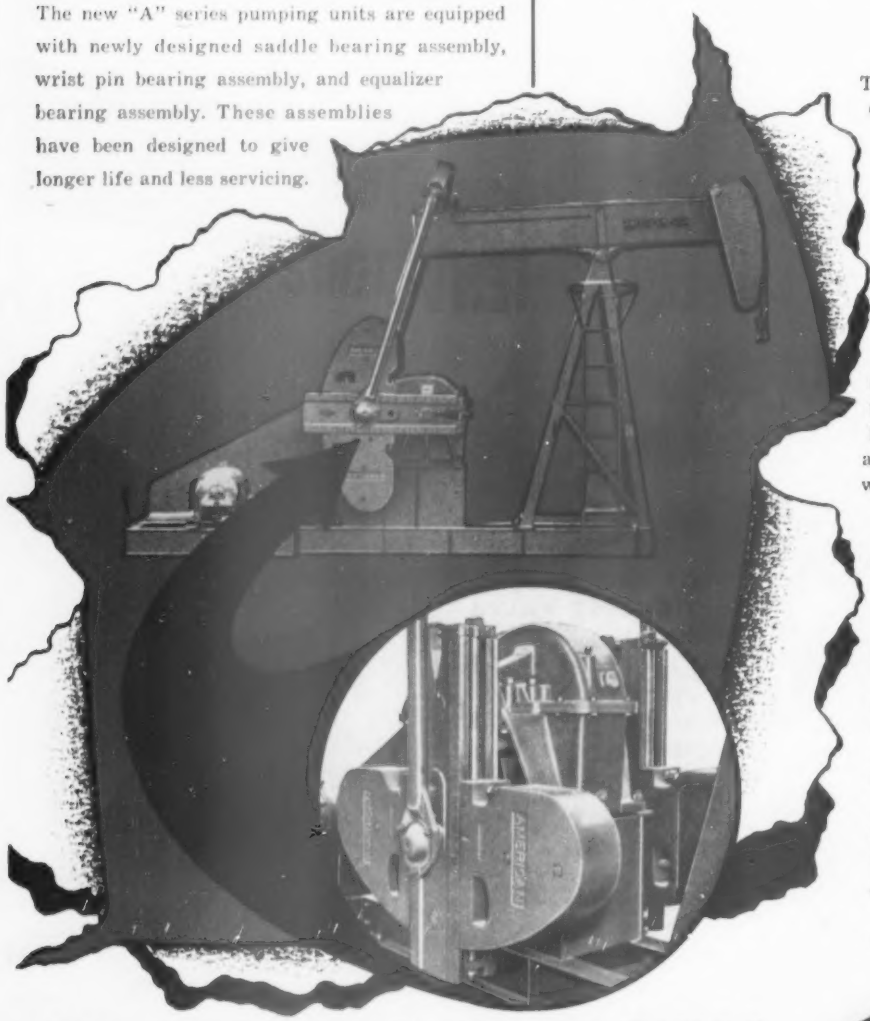
Extra ★★★ OIL SHOW NEWS Extra ★★★

Oil Field Equipment Since 1924

AMERICAN Announces New Pumping Units

New Designs Mean Less Servicing

The new "A" series pumping units are equipped with newly designed saddle bearing assembly, wrist pin bearing assembly, and equalizer bearing assembly. These assemblies have been designed to give longer life and less servicing.



New "A" Series Features Adjustable Counterbalance Crank - - -

The American Manufacturing Company of Texas announces its new "A" series pumping units. These new pumping units combine the famous American quality with the new adjustable counterbalance crank.

Easily Adjustable

One man can easily adjust the unit counterbalance by simply loosening two bolts that hold each master weight in position and turning the acme screw that moves the weight to the desired position on the crank. These cranks are also available without the acme screw; the weights can then be moved with a pry bar.

Exact Counterbalance

With the calibrated crank it is possible to adjust the counterbalance to the exact predetermined amount. Pocket type weights can be added to the back side of the master weights to give maximum counterbalance.

American units with leaf weight type cranks are still available.

AMERICAN MFG. CO. OF TEXAS

FORT WORTH 11, TEXAS

HOUSTON • KILGORE • ODESSA • TULSA

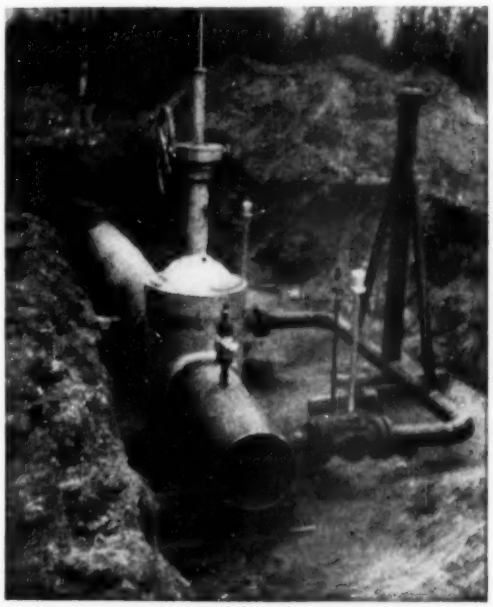
GET BOTH { CAST STEEL GATE VALVES AND LUBRICATED PLUG VALVES

made by Walworth...for crude, finished products, and gas pipelines

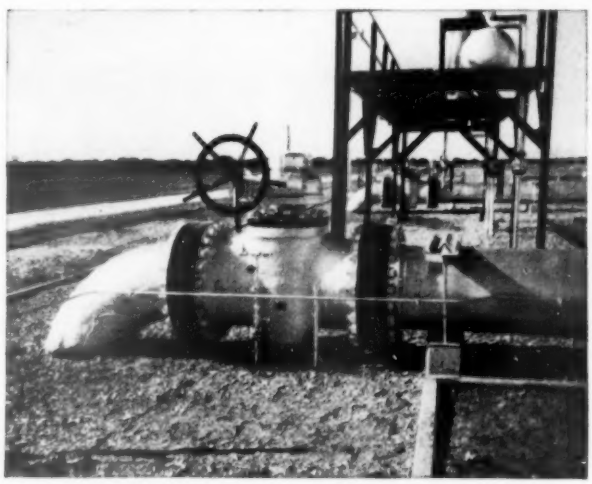
It's the old, old story . . . one source of supply, one order, and one responsibility! It's as simple as that . . . and it's that simple because Walworth – one of the world's outstanding valve manufacturers – and only Walworth, makes both Cast Steel Gate Valves and Lubricated Plug Valves for pipeline service.

WALWORTH TYPE 49 CAST STEEL GATE VALVES

Designed on the through-port principle . . . body and disc ports are accurately indexed . . . body ports bored to match connecting piping . . . no obstructions to interfere with free flow of liquid or the passage of pigs or scrapers . . . no recesses to accumulate dirt . . . no internal lubrication required. These valves may be installed without regard to flow direction. Sizes: 2 to 30 inches, inclusive. Series 400 and 600 for working pressures up to 1440 pounds per square inch.



Walworth 30-inch, Type 49, Cast Steel, Pipeline Gate Valve installed in a gas line.



Walworth 24-inch, Cast Steel, Lubricated Plug Valve on discharge line in gas booster station.

WALWORTH LUBRICATED PLUG VALVES

Features include: quick opening and closing with quarter-turn of plug . . . no threaded stems or complicated seating mechanisms . . . plug is always seated in the body . . . foreign matter cannot wedge between seating surfaces . . . lapped surfaces of both plug and body, plus lubricant seal, assure tight, leakproof closure. Made of steel, iron, bronze, or special alloys. Sizes: ½ to 30 inches, inclusive. Working pressures: 125 to 5,000 pounds per square inch.

• • •

Both the Walworth Type 49 and the Walworth Lubricated Plug Valves have many more outstanding features. Ask your Walworth distributor to tell you about them or write Dept. 07 for illustrated circulars.

WALWORTH

valves • fittings • pipe wrenches

60 EAST 42nd STREET, NEW YORK 17, N. Y.

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

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LARGE CASING THREADS TAPPED IN 12 MINUTES

BAKER OIL TOOLS, INC., of Los Angeles, California, reports that a **LANDIS** CBLM Circular Chaser Tap mounted on a Stamet's vertical tapping machine has reduced threading time 75% tapping 6⅝" to 13⅜" diameter threads in casing shoes.

Production examples illustrate the large savings made in threading time: (1) tapping 13⅜" N-80 tubular stock, oil well casing shoe with 8 Pitch API round threads 5" long requires but 12 minutes; (2) tapping a 6⅝" piece with an 8 pitch API round thread 5" long takes only 8 minutes. Formerly threading a typical casing shoe would have required all of 40 minutes.

The **LANDIS** CBLM Tap, as used at Baker, is designed for use on production tapping machines to thread line pipe, casing, and drill pipe couplings. The tap head is detachable, and with the use of the various size tap heads available, the CBLM Tap will tap threads ranging from 4½" to 13⅜" O.D. It will cut either 3/16", ⅜", or ¾" tapered threads well within all API Standards, and can also be arranged for straight threading. Infinite taper adjustments are possible either above or below the required degree of taper to assure precision accuracy.

LANDIS manufactures a wide variety of taps for the economical production of internal threads ranging from 1¼" to 13⅜", either straight or tapered threads, on both stationary and rotating spindle machines. To ensure complete information, please enclose specifications when writing.

VISIT OUR EXHIBIT AT THE TULSA OIL SHOW, MAY 14-23
BOOTHS 17 & 18, CALIFORNIA BUILDING

LANDIS *Machine* CO. WAYNESBORO, PENNSYLVANIA, U. S. A.

Represented in the Domestic Oil Fields by: **Colcord-Wright Machinery & Supply Co., St. Louis, Mo.; C. J. Harter Machinery, Houston, Texas; Frederic-Baker Co., New Orleans, La.; Moore Machinery Co., Los Angeles and San Francisco, Calif.; Hendrie & Bolthoff Mfg. & Supply Co., Denver, Colo.**

The New GRINNELL MODEL R CONSTANT SUPPORT HANGER

Mathematically perfect constant support for all positions of travel of high temperature process and steam piping

With the new Grinnell Model R Constant Support, the pipe, its covering and contents, are supplied mathematically perfect support in all positions of travel. In addition, constant support is maintained throughout the full range of field adjustability.

The design of the new Model R provides favorably small ratios between spring force and the supported load, ranging from 1.15 to 1 minimum and 4 to 1 maximum, thereby minimizing bearing stress and prolonging the life of the hanger. This permits hangers which are smaller in size for the loads carried.

If conditions require a change of supporting force, a load scale is provided so that accurate field adjustments of at least plus or minus 10% may be made by turning a *single* load adjusting bolt. Wherever the adjustment is set, the Model R gives a load deflection curve that is a straight horizontal line.

FEATURES OF GRINNELL MODEL R CONSTANT SUPPORT HANGER:

- 3 frame sizes provide maximum travel of 4 inches, 8 inches and 12 inches respectively to accommodate all loads from 48 to 9,304 pounds
- Non-resonant
- Anti-friction needle bearings keep friction to a minimum
- Individually calibrated before shipment to support exact load specified
- Requires less head room
- Can be bolted directly to the building structure or suspended by either single or double rods

SEND FOR DETAILED CATALOG ON NEW GRINNELL MODEL R CONSTANT SUPPORT HANGER

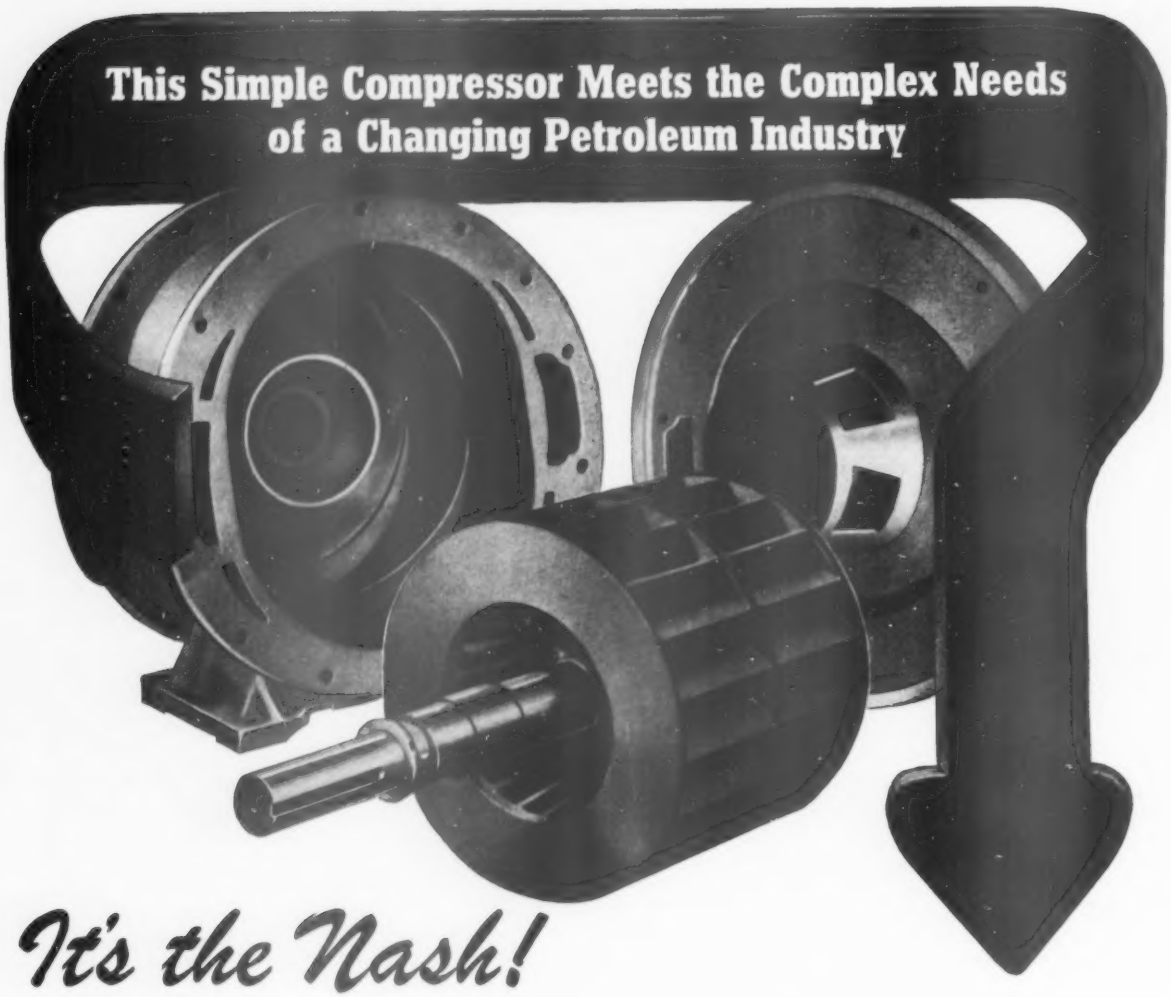
GRINNELL

AMERICA'S #1 SUPPLIER OF PIPE HANGERS AND SUPPORTS

Grinnell Company, Inc., Providence, Rhode Island • Coast-to-Coast Network of Branch Warehouses and Distributors

pipe and tube fittings • welding fittings • engineered pipe hangers and supports • Thermolier unit heaters • valves Grinnell-Saunders diaphragm valves • pipe • prefabricated piping • plumbing and heating specialties • water works supplies industrial supplies • Grinnell automatic sprinkler fire protection systems • Amco air conditioning systems

This Simple Compressor Meets the Complex Needs of a Changing Petroleum Industry



It's the Nash!

Here is a compressor presenting advantages found in no other device. Nash Compressors have only one moving part, rotating without metallic contact with the pump casing. No internal lubrication is required. Yet they produce 75 lbs. pressure in a single stage, with capacities to 6 million cu. ft. per day in a single structure.

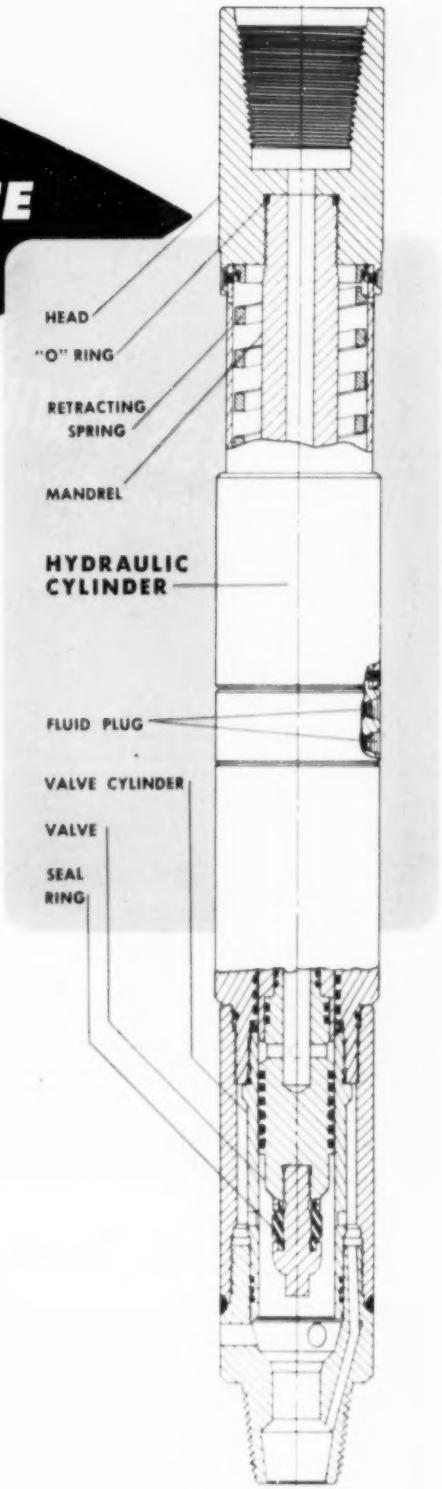
There are no valves, gears, pistons, sliding vanes, or other complicated wearing parts in a Nash. Compression is secured by an entirely different principle of operation. Because of this, gas pumping problems difficult with ordinary pumps are often easily handled by the Nash. For example, Nash Pumps are standard equipment in the Synthetic Rubber Industry, where they have met the needs of new and difficult processes.

Nash Compressors are compact and save space. They run without vibration, and compression is without pulsation. They maintain original performance over long periods. Service is assured by a nationwide net-work of Engineering Service offices. Instructive bulletin shows how they operate. Write for it.

- One moving part.
- No internal wearing parts.
- No valves, pistons, or sliding vanes.
- No internal lubrication.
- Low maintenance.
- Slugs of liquid entering pump do no harm.
- Non-pulsating pressure.
- Saves floor space.
- 75 pounds in a single stage.

NASH ENGINEERING COMPANY
274 WILSON, SO. NORWALK, CONN.

new test tool gives PERFECT PERFORMANCE in over 1500 jobs!



REMARKABLE RECORD SET BY HALLIBURTON'S *NEW*

HYDROSPRING TESTER

A perfect test every time used . . . that's the record of Halliburton's new Hydrospring Tester! Now, without the slightest doubt, Halliburton's best for your drill stem test!

Hydrospring was not only trouble-free and fool-proof in over 1500 field trials, but proved to offer many other great new advantages:

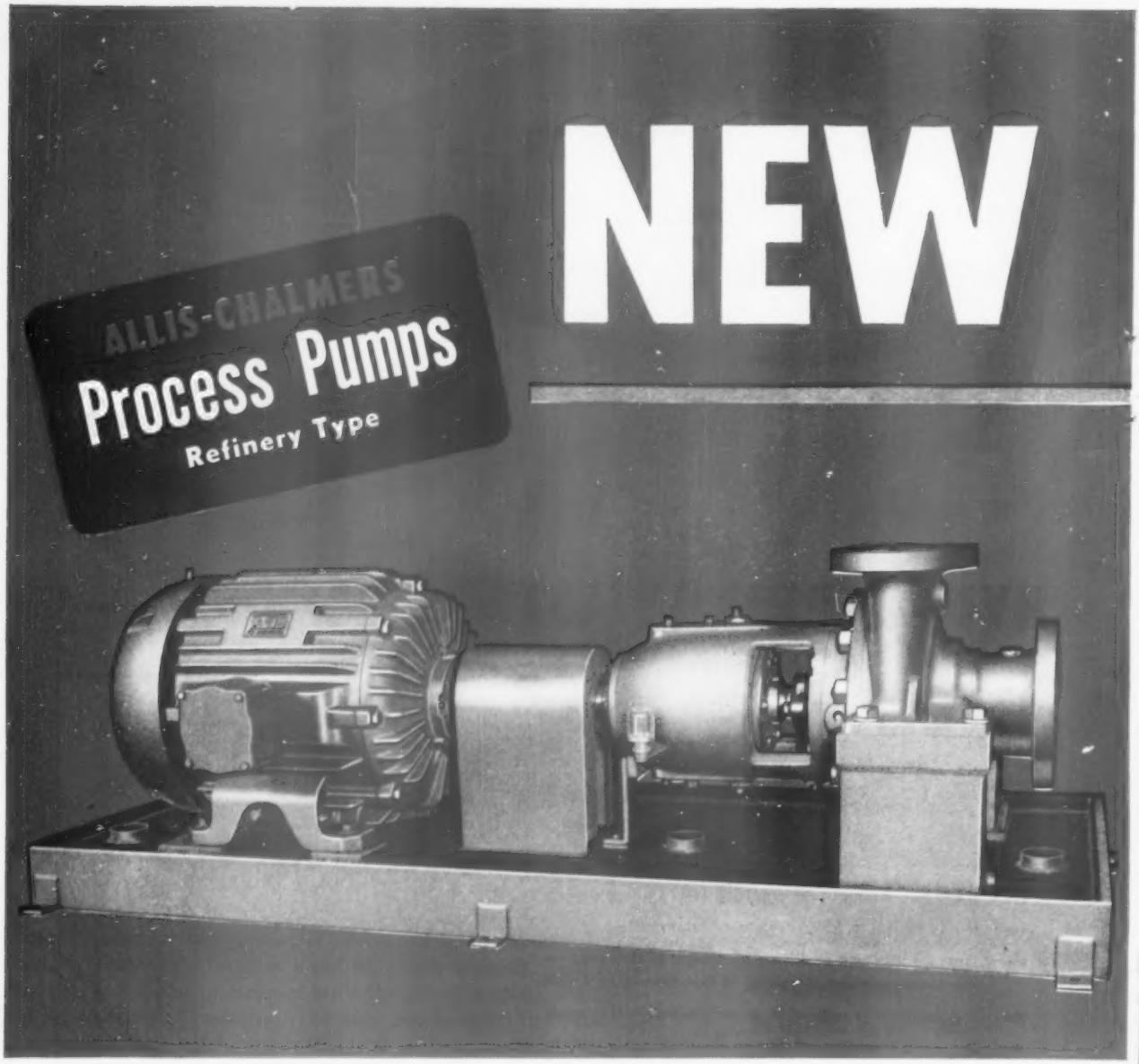
- **It's a combination tool requiring fewer assemblies.**
- **It can be run in faster, reaches bottom easier.**
- **Opens easily and positively by weight of drill pipe — eliminates rotating, dropping of bar, turning of J-slots.**
- **It gives positive indication at surface that tool is open.**
- **It permits reversing off bottom simultaneously with taking closed in pressure.**
- **It can be rotated coming out of hole.**

No previous development promises so much to the success of your test. Combined with the Bourdon Tube Pressure Recording Device, Halliburton's million-job experience, and full-time personal attention, there's no testing service in the country to compare with Halliburton's.

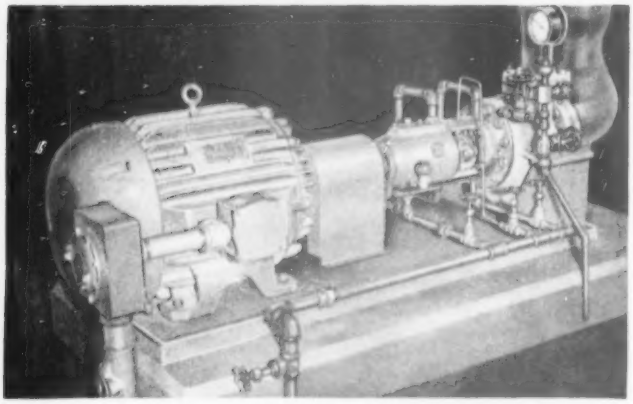
You'll hear a lot of good things about Hydrospring Tester. Hear them first hand from your Halliburton Testing operator who's only minutes away from you. Make sure you get the new benefits of Hydrospring Tester on your next job. It's worth a call right now. Halliburton Oil Well Cementing Company, Duncan, Oklahoma.

LEADS AHEAD ON DRILL STEM TESTING!

HALLIBURTON



Easy Installation and Maintenance



All Allis-Chalmers Type R pumps are furnished with spacer-type couplings. This type of coupling permits the pump to be disconnected from the driver and the entire rotating element — bearing bracket, shaft and impeller — removed without disturbing either the piping or the driver. This type of assembly permits quick examination of the pump, simplifies repairs or replacements and keeps downtime of the unit to a minimum.

In addition, two sets of bearing bracket assemblies fit the complete range of pump sizes. Since parts for only two sizes of bearing brackets are required, regardless of the number of pumps operated, parts inventories are greatly reduced. All bearing bracket parts of R-9 pumps are interchangeable and all R-12s are interchangeable. Where continuous operation is vital, a complete spare assembly can be kept on hand and replaced very quickly.

Refinery Pump

☆ **Specially designed for high temperature operation**

☆ **Choice of materials and stuffing box arrangements**

☆ **Ample provision for cooling**

HERE IS AN ENTIRELY NEW refinery-type pump. It has every feature designed for continuous trouble-free service and to keep your process pumping costs low.

Sealing Arrangement

When the standard stuffing box is used, it carries an adequate amount of packing plus a seal cage. A mechanical seal is interchangeable with the packing. No machining required. A seal plus auxiliary stuffing box may be installed by simply cutting off the end of the standard stuffing box.

Cooling Methods

The stuffing box is cooled by a water jacket of ample capacity. Further cooling of the packing is provided by in-and-out connections for the sealing oil, which is thus able to act as a coolant as well as a sealing medium. The stuffing box is provided with a water-flushed smothering gland. A second water jacket surrounds the front bearing and the lower part of the oil reservoir. For extremely high temperature operation, a water-cooled pedestal can be supplied.

Throat Bushing

A renewable throat bushing is tack-welded on the pump side of the stuffing box. The close clearance between the bushing and the shaft sleeve cuts infiltration into the stuffing box to a minimum. In case of seal or packing failure, the bushing remains in position and will not blow out.

Wearing Rings

The impeller and casing are both provided with front and rear wearing rings which make it easy and economical to maintain proper clearance. This design also reduces side thrust which in turn reduces shaft deflection and wear.

Double Volute

Double volute design is used in pumps of more than 400 gpm capacity. Forces set up in one volute are counteracted by equal and opposite forces in the other volute. Deflection forces are greatly reduced.

The impeller has low NPSH requirement so that it will successfully handle high volatile liquids at high temperatures.

Centerline Mounting

The pump is mounted at the centerline of the casing. Pipe strains are transmitted directly to the foundation. When proper precautions are taken, alignment of rotating parts will not be affected.

Complete Pumping Unit

Allis-Chalmers can supply a complete pumping unit — pump, motor and control — assembled and ready to install. Coordinated design and manufacture assure undivided responsibility. Call your nearby Allis-Chalmers District Office for help on your next pumping problem. Or write for Bulletin 52B7775. Allis-Chalmers, Milwaukee 1, Wis.

A-4031

ALLIS-CHALMERS

UNIONS ARE OUR BUSINESS

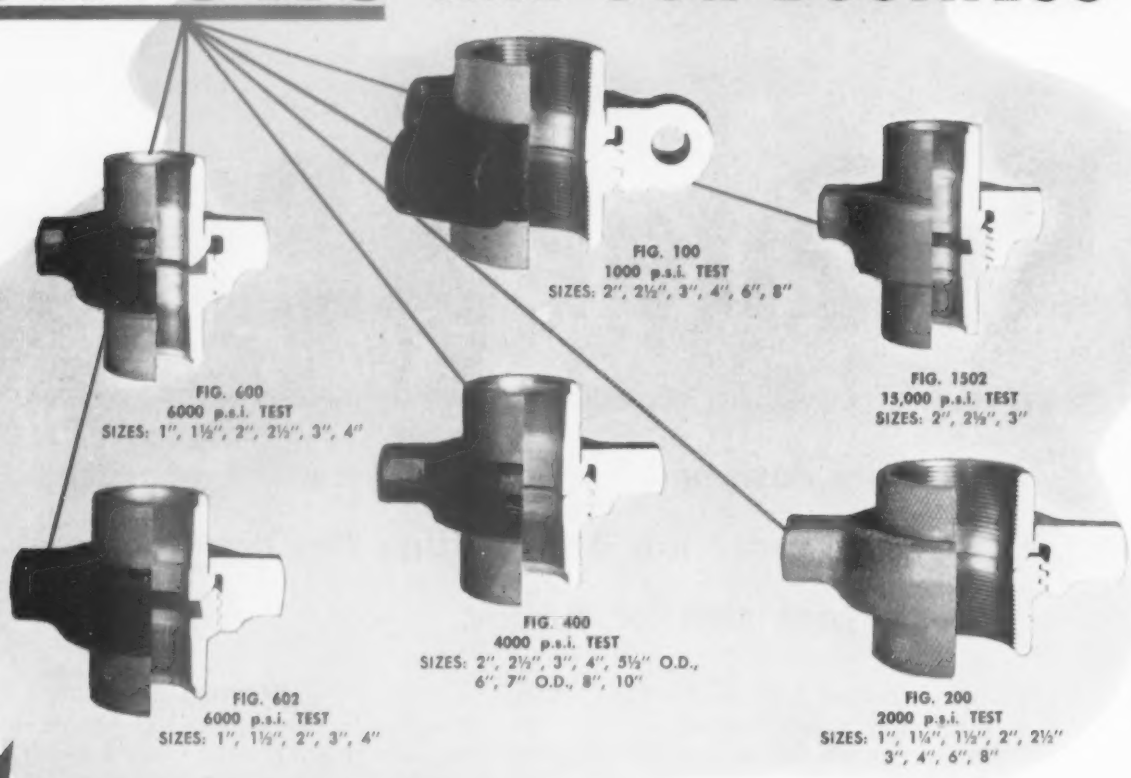


FIG. 100
1000 p.s.i. TEST
SIZES: 2", 2½", 3", 4", 6", 8"

FIG. 600
6000 p.s.i. TEST
SIZES: 1", 1½", 2", 2½", 3", 4"

FIG. 1502
15,000 p.s.i. TEST
SIZES: 2", 2½", 3"

FIG. 400
4000 p.s.i. TEST
SIZES: 2", 2½", 3", 4", 5½" O.D., 6", 7" O.D., 8", 10"

FIG. 602
6000 p.s.i. TEST
SIZES: 1", 1½", 2", 3", 4"

FIG. 200
2000 p.s.i. TEST
SIZES: 1", 1¼", 1½", 2", 2½" 3", 4", 6", 8"

That's why it's wise to Standardize with WECO

• Almost 20 years ago we pioneered Acme-thread wing-nut unions for the oil industry and have devoted our engineering skill and manufacturing craftsmanship to their production and improvement ever since.

We make it our business to give you unions that assure a safe and sure seal . . . that withstand the severest abuse and hardest service . . . that are conservatively pressure-rated . . . that are easiest to make-up and quickest to break out.

Whatever your service requirements, there is a WECO Union that is exactly right for the job. And this, we believe, is the basis for longer service and maximum economy from unions.

Ask your WECO Representative or your Supply Store for the WECO Union that will give you the utmost in economy and service wherever unions are needed.

WECO
UNIONS

SOLD EXCLUSIVELY
THROUGH SUPPLY STORES

PESA

It's Wise to Standardize with... WECO ...

WELL EQUIPMENT MFG. CORP.
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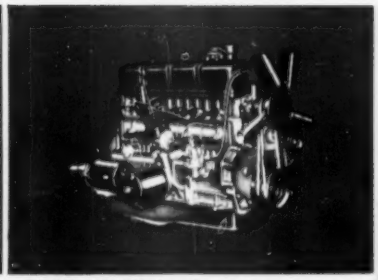
HOUSTON 1, TEXAS
CHIKSAN COMPANY
Brea, Calif. Chicago 28, Ill. Newark 2, N. J.
CHIKSAN EXPORT COMPANY, Brea, Calif. Newark 2, N. J.

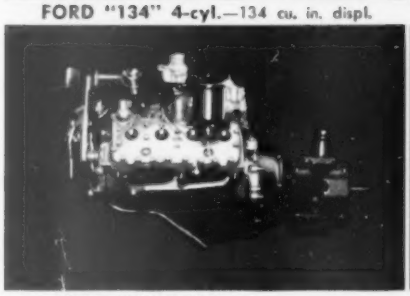
Manufacturers and Distributors of Oilfield, Refining, Marine and Industrial Equipment

MOST COMPLETE LINE OF WING UNIONS IN THE WORLD

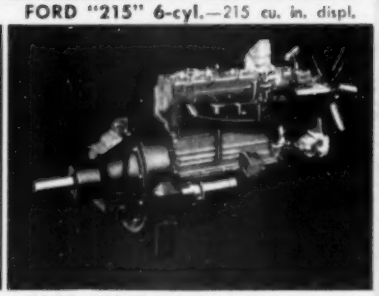
FORD "134" 4-cyl.—134 cu. in. displ.



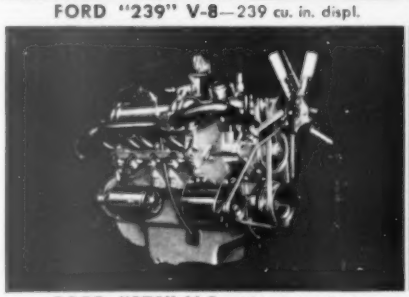
FORD "215" 6-cyl.—215 cu. in. displ.



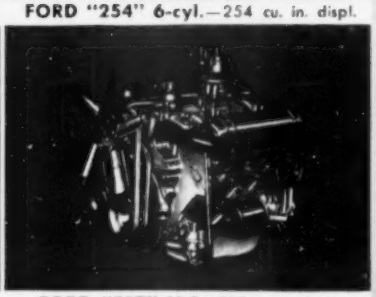
FORD "239" V-8—239 cu. in. displ.



FORD "254" 6-cyl.—254 cu. in. displ.



FORD "279" V-8—279 cu. in. displ.



FORD "317" V-8—317 cu. in. displ.

OIL FIELD Applications of FORD Industrial Power:

- EARTH BORERS
- CRANES
- CEMENT TRUCKS
- CLEAN OUT MACHINES
- HOISTS—WINCHES
- SPUDDERS—WELDERS
- CASING PULLERS
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- DRILLING RIGS
- FORK LIFT TRUCKS
- PIPE LINE PUMPS
- PIPE LINE INSULATORS
- OIL WELL PUMPS
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and many others

Specify FORD Power for PROFIT!

More and more oil field equipment manufacturers and operators are solving the problems of efficient, dependable, economical power by *specifying* Ford!

Six Great Series of Engine Assemblies or Complete Power Units are available in the present line of Ford Heavy Duty Industrial Engines. They range from 134 cu. in. to 317 cu. in. displacement . . . every one precision-built, thoroughly tested and ready-to-run.

Write for current literature and, when you've looked it over, our experienced Sales Engineers will be happy to develop recommendations to fit your application upon request. Do this today.

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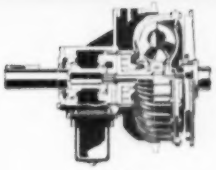


FORD
MULTA TORQUE
CONVERTER

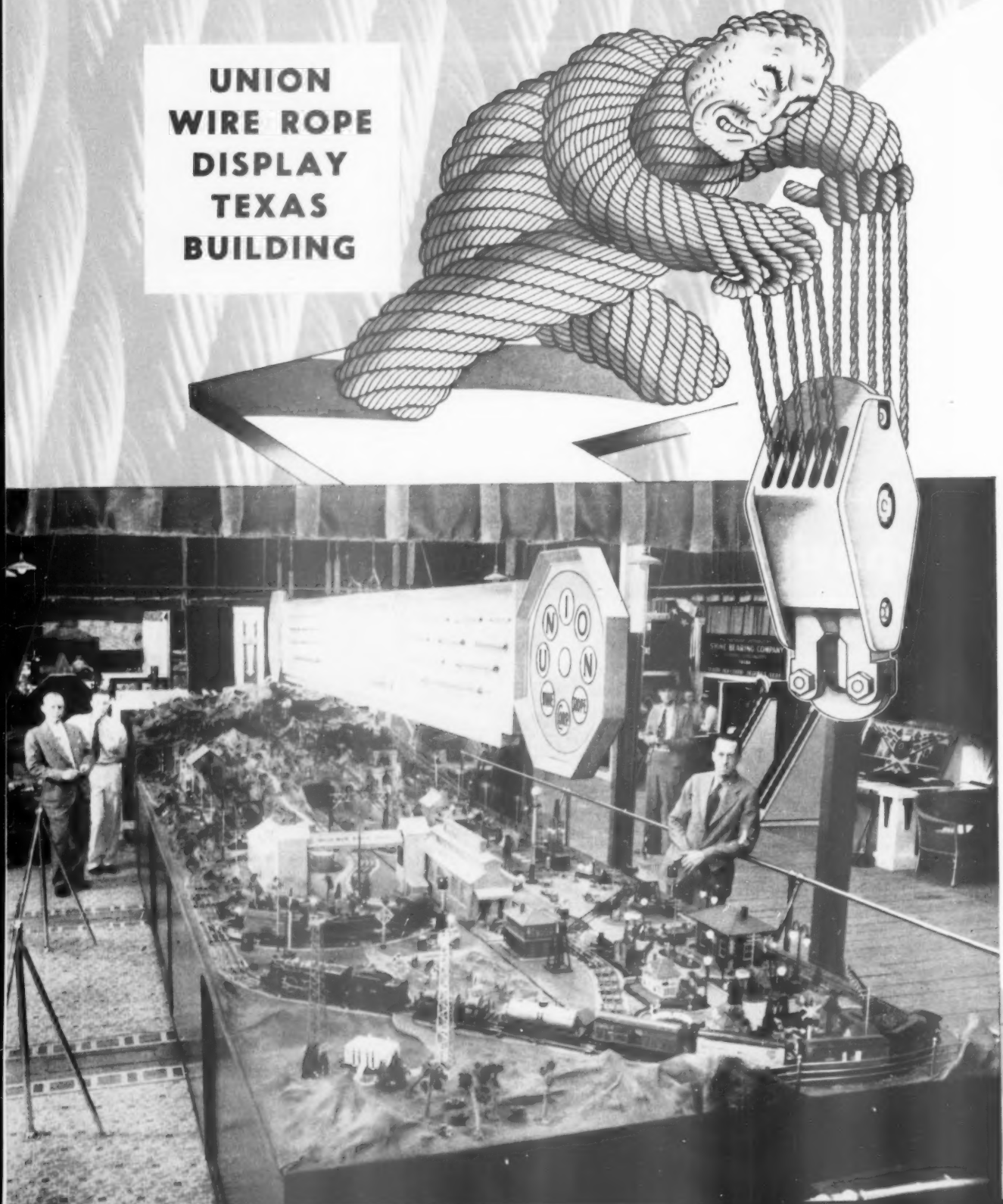
On a drilling rig, for instance, the torque converter will maintain constant torque and protect expensive tools by its cushioning effect. This means fewer broken drill pipes, less time spent fishing for tools and more economical operation. The entire rig is protected against shock. Available with our "215," "239" and "254" Engines or Power Units at low additional cost.

FORD MOTOR COMPANY IS CELEBRATING ITS FIFTIETH ANNIVERSARY — 1903-1953

Ford
INDUSTRIAL ENGINES AND POWER UNITS

DON'T MISS SEEING - Tuffy®

UNION WIRE ROPE DISPLAY TEXAS BUILDING



Rope STAR of The Oil Show

Talk In Person With These Union Wire Rope Specialists...

They Created Tuffy Rotary Line . . . Star Ton-Mile Performer in Rotary Drilling

These are the men who developed the special construction design of Tuffy Rotary Lines. They can show you how the new Tuffy drilling line, using special steels, gets proved higher resistance to shock loads, drum crushing and internal friction. They'll explain when it's best to use Tuffy Standard Rotary Line . . . why Tuffy Jackknife Rotary Line is better for another job. You'll see for yourself why so many tool pushers and rig operators are switching to Tuffy Rotary Lines!

Also, at the Show Try Your Hand in Tying Knots and Kinking Tuffy Slings

Our bet is that you won't be able to kink *or* knot Tuffy Slings . . . but we're willing to have you try! These slings utilize a new, patented construction method that's entirely different from stranded rope! Nine separate parts are machine braided to make a sling that is easier to handle, stronger and more flexible! This exhibit will particularly interest pipe line layers and refinery construction and maintenance men.

Return Engagement! The Always Popular Union Wire Automatic Miniature Railway System Will Be Operating at the Oil Show

There's always a crowd around this exhibit, but we hope you'll be able to squeeze through to the front row for a good look. This accurate model railroad automatically does everything the big ones do — loads and unloads freight, switches cars from track to siding, climbs mountains, stops at stations, factories, etc. Everyone who has seen the Union Wire Rope miniature train exhibit remembers it and looks for it. If you haven't seen it before, be sure to this time, because you're sure to find it interesting!

They Took the Guess Work Out Of Cut-Off Procedure

These men will hold clinics where Tuffy engineers will tell you about the new cut-off procedure that saves drilling rope and cuts drilling costs! You'll talk to them personally about this new way to get more ton miles of service — a method that's now paying off in oil fields all over the country! It's a chance for rotary rig owners, tool pushers and drillers to get the answers to many questions you may have on tough drilling conditions!

NEW FREE HANDBOOK

This book contains the latest oil field information on wire rope uses in well drilling including cut-off procedure. There are more than 40 pages of facts, ready for you to use, explained with tables, charts and photographs. Ask for your FREE copy of this new Well Drilling Handbook at the Union Wire Rope exhibit!

Union Wire Rope Specialists Will Show You How Easy It Is to Cut Costs . . . Save Rope With the Ton-Mile Indicator

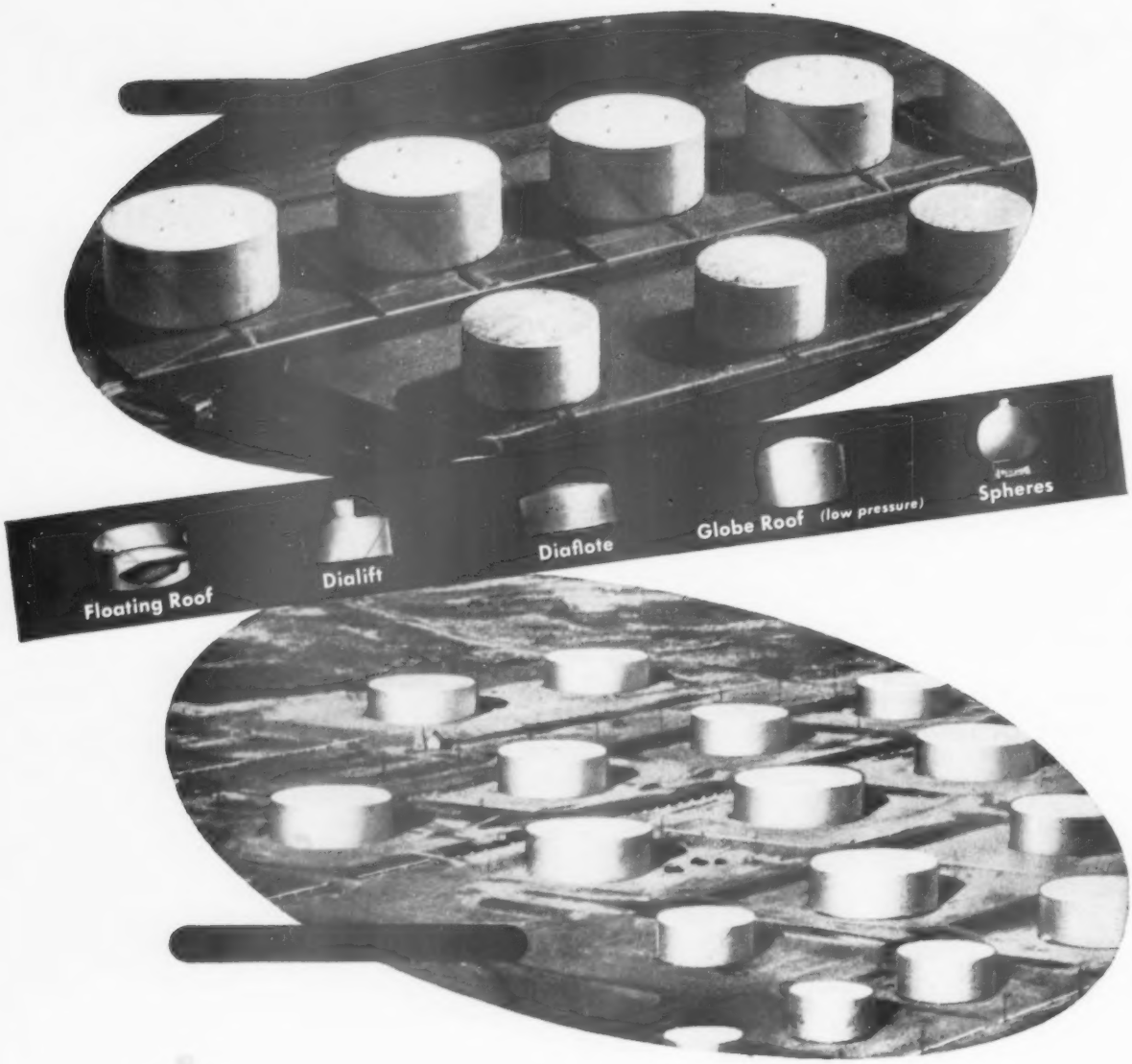
Here's a slide that gives you an easy way to measure line work and prevent overloading! Union Wire engineers will show you how to use the Ton Mile Indicator to accurately measure the work rope has done, find out how much work is left in it before you need to cut! All the complicated figuring is done for you *automatically!* Ask for your FREE Ton Mile Indicator at the Union Wire Rope exhibit!

union Wire Rope corporation

2102 MANCHESTER AVENUE

Specialists in Wire Rope, High Carbon Wire and Braided Wire Fabric

DISPLAYING IN THE TEXAS BUILDING



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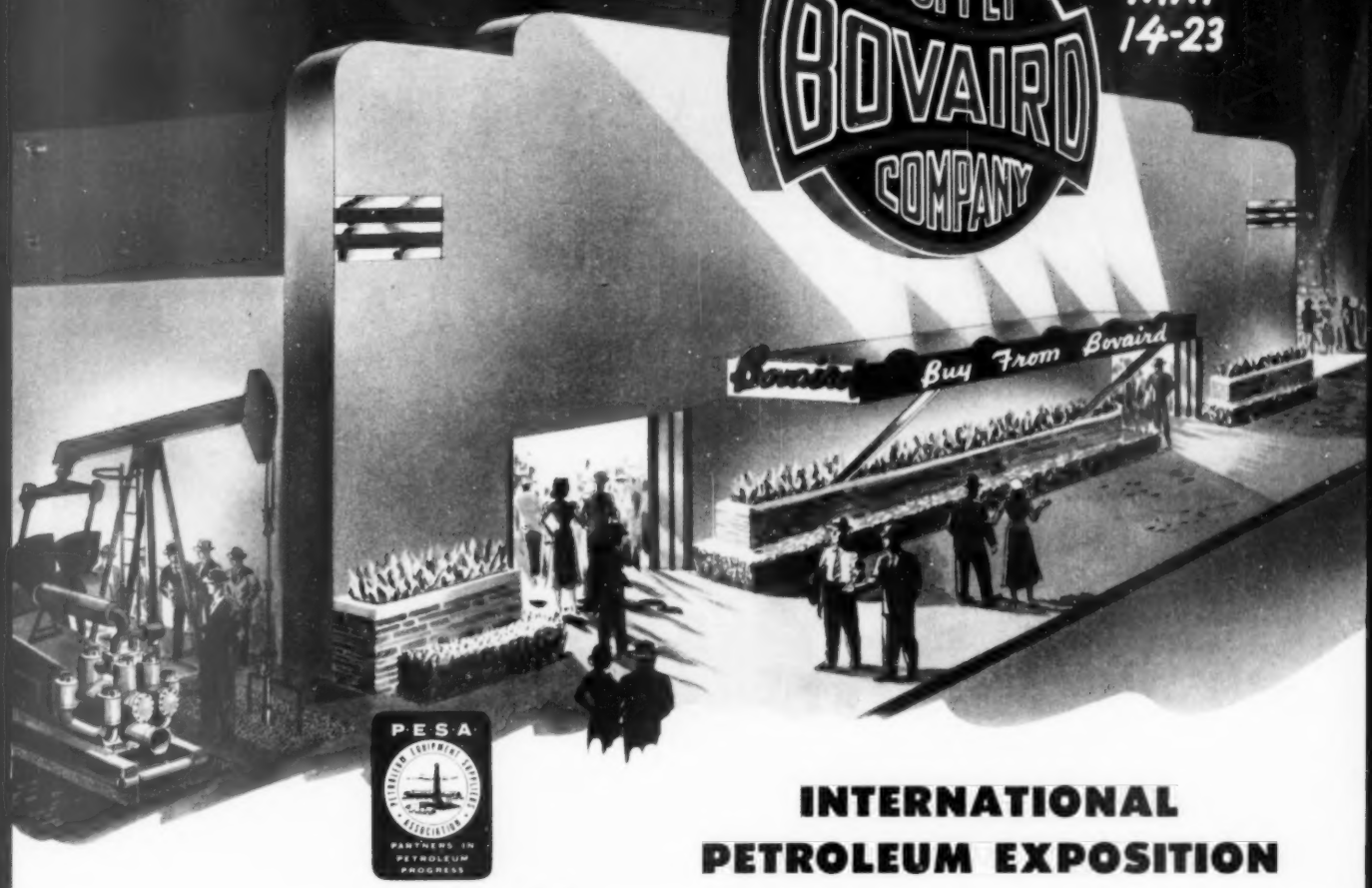
MAY 14-23



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...Ideal for any well

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with Patented Top Lock and Valveless Plunger*

- Holds the plunger in a rigid stationary position
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- Makes abrasive pumping practical at any depth

* Patent Number 2509223

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DW-8

Let us bring you up to date, Uncle Billy

It's 94 years since you put the pitcher pump on that well at Titusville, Uncle Billy Smith. But the job you and Colonel Drake did in drilling that 25-barrel-a-day well really started something.

In fact, it started many things including the vast international petroleum industry and the manufacturing and supply organization, world-wide in scope, called The National Supply Company.

To give you an idea of what has happened in equipment alone, just look at all that machinery used in present-day drilling — you'd have to get your bearings all over again if you decided to drill any more oil wells.

But you'll get even a better idea when you see the National Supply exhibit at Tulsa. Oh, didn't you know — they're having a big show over there — all kinds of machinery for drilling and producing oil?

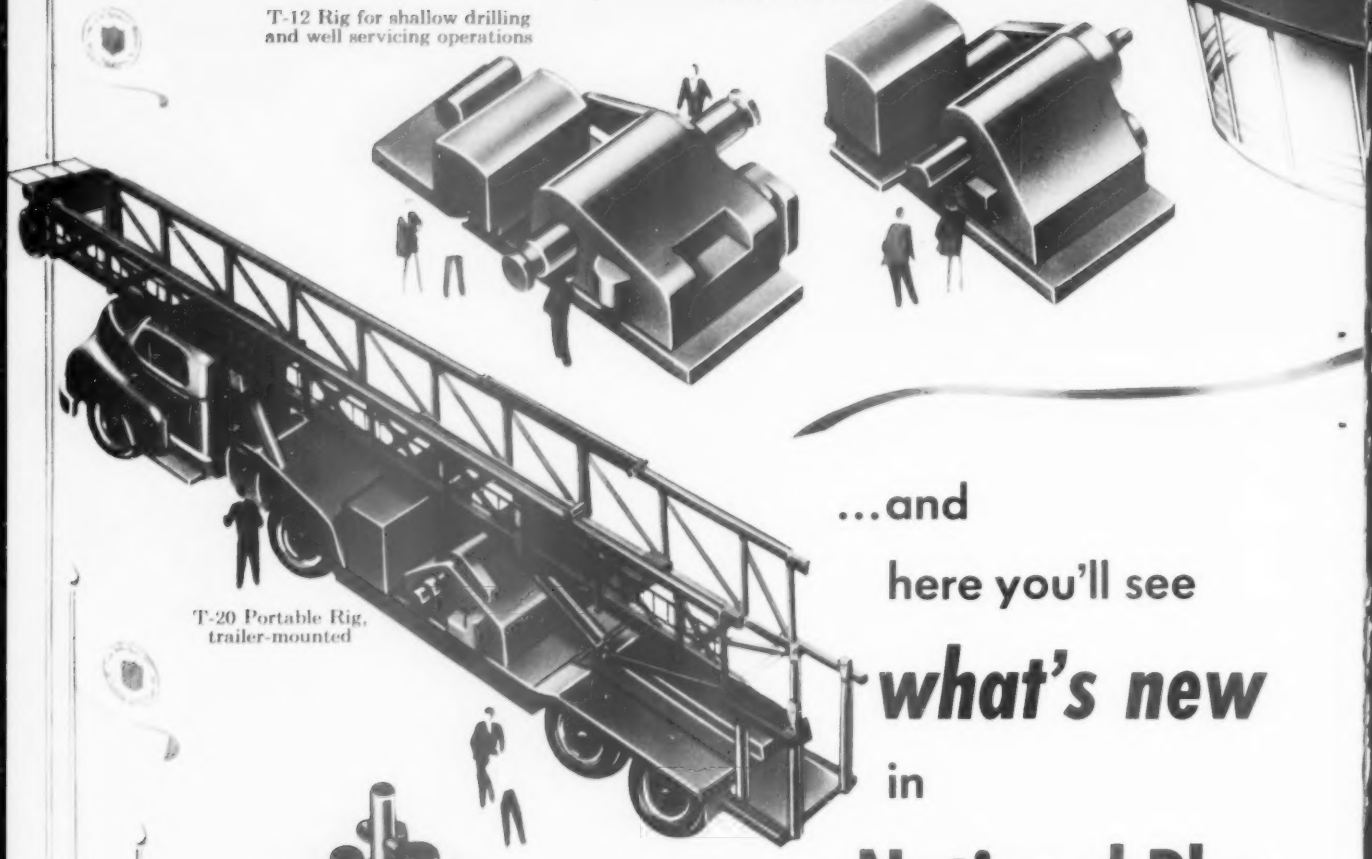
Well, let us bring you up to date, Uncle Billy — just remember you started all this almost a century ago. Now we'll have a look at the 30th International Petroleum Exposition, and see what National Supply has been doing all these years . . .

THE NATIONAL SUPPLY COMPANY

Pittsburgh 30, Pennsylvania

T-8 Rig for servicing and workover, as well as for shallow-well drilling

T-12 Rig for shallow drilling and well servicing operations



T-20 Portable Rig, trailer-mounted

...and

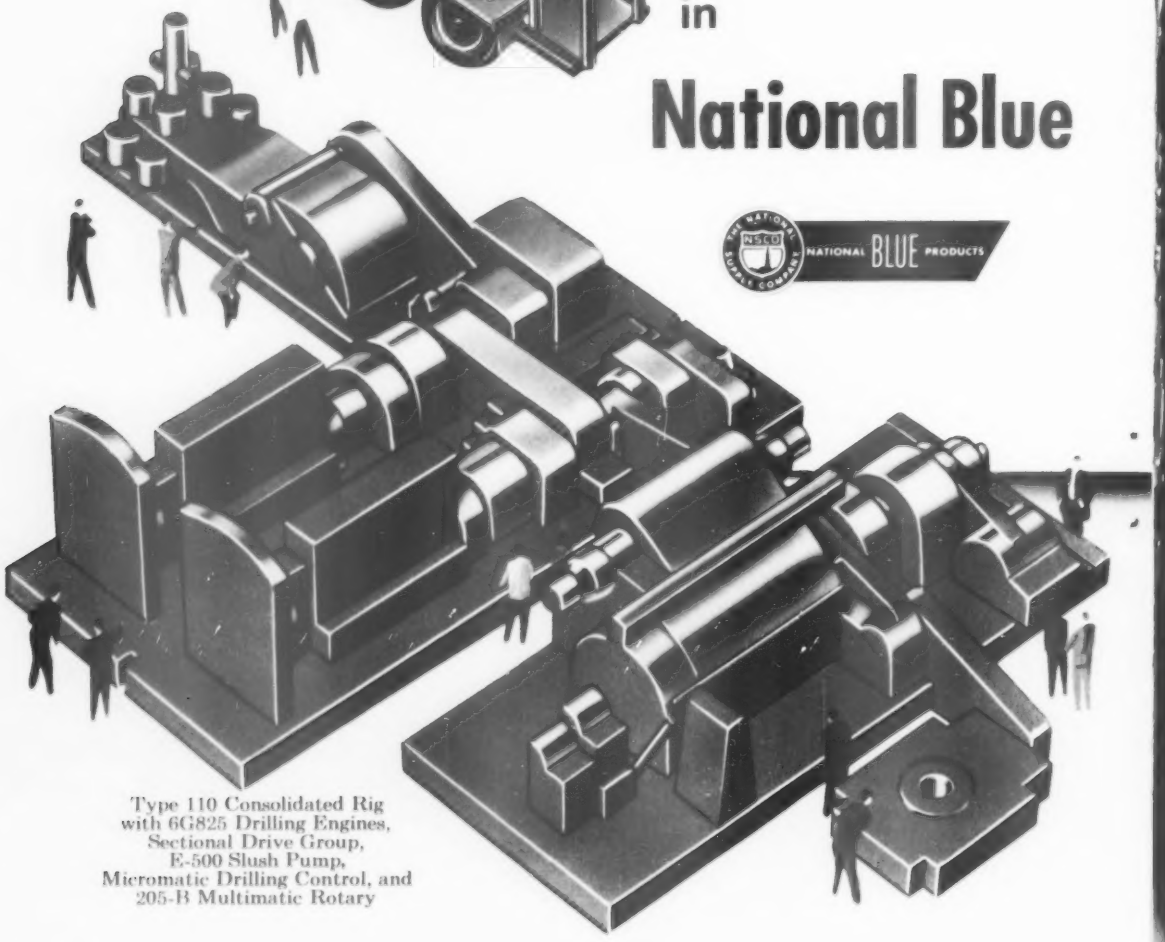
here you'll see

what's new

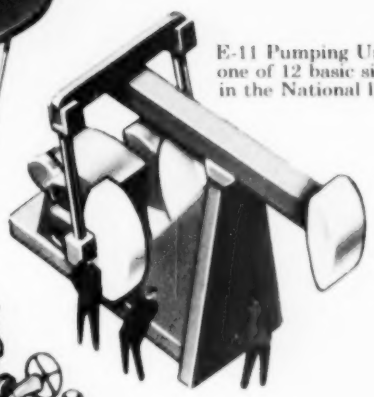
in

National Blue

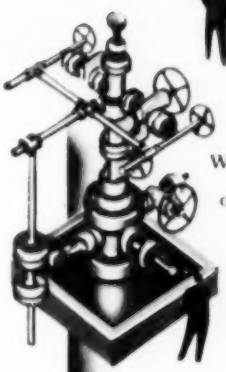
NATIONAL BLUE PRODUCTS



Type 110 Consolidated Rig with 6G825 Drilling Engines, Sectional Drive Group, E-500 Slush Pump, Micromatic Drilling Control, and 205-B Multimatic Rotary



E-11 Pumping Unit, one of 12 basic sizes in the National line



Wellhead Equipment for all types of oil and gas wells

Throughout all of the years National Supply has served the petroleum industry as a storekeeper, and as an oilfield equipment manufacturer, its products have gone through progressive development, while continually increasing in number.

Here, in parade-ground array, is a representative collection of new and improved drilling and production equipment. Each unit on display is a member of a family of National Supply products, proved in service throughout the world of oil.

After you've had an opportunity to look over this machinery at the National Supply exhibit, be sure to fill out a card for new product bulletins. Or, if you're not going to be at Tulsa, write Pittsburgh for publications on any of these units, or others you'll find described in the composite catalogs.

THE NATIONAL SUPPLY COMPANY

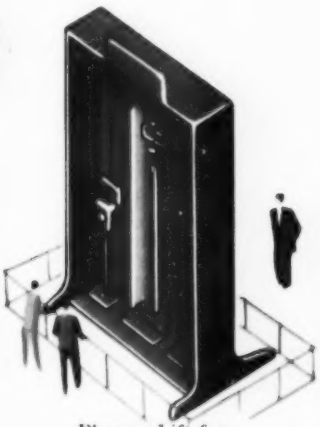
PITTSBURGH 30, PENNSYLVANIA

DIVISION OFFICES: Denver; Ft. Worth; Houston; Pittsburgh; Tulsa; Torrance

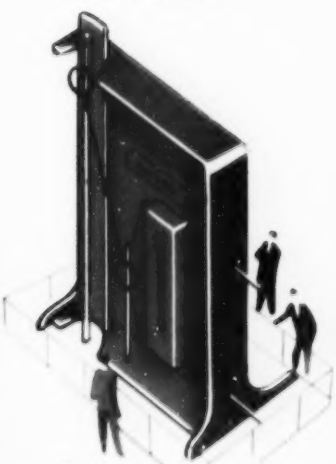
CANADA: The National Supply Company, Ltd., 2nd Floor F. W. Clark Bldg., 709 Eighth Avenue, West, Calgary, Alberta

EXPORT: 600 Fifth Avenue, New York 20, N.Y., U.S.A.; River Plate House, 12 South Place, London E.C. 2

NATIONAL OIL FIELD MACHINERY AND EQUIPMENT
SPANG STEEL PIPE • SUPERIOR & ATLAS ENGINES

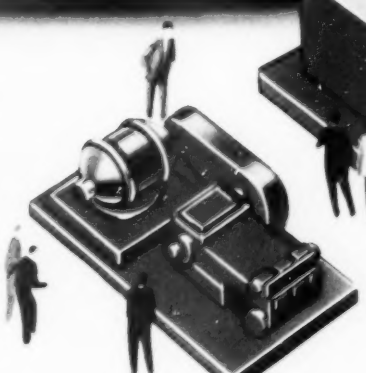


Plunger Lift for producing wells by gas propulsion

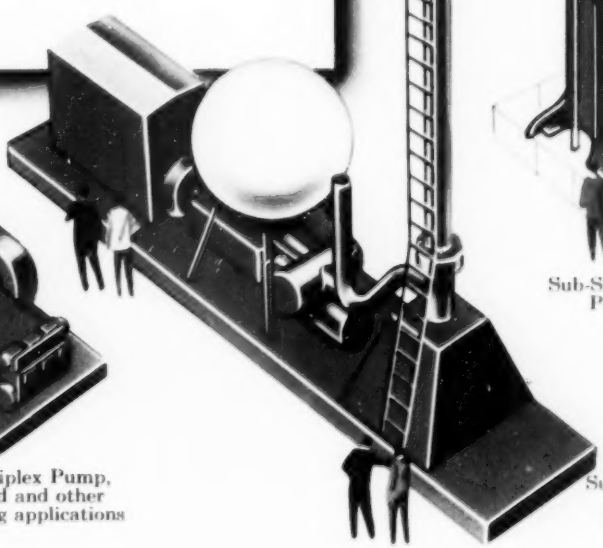


Sub-Surface Hydraulic Pumping Unit

Type "F" Hook Block, 300 ton capacity



Type F-90 Triplex Pump, for waterflood and other oilfield pumping applications



Surface Hydraulic Long-Stroke Pumping Unit

...and in SPANG products,

there's always something new

The long list of Spang Tubular Products continues to grow longer with important recent additions such as Spang Extreme Line Tubing and Spang Grade P-110 Extreme Line Casing—developments resulting from many years of field and laboratory research on tubing and casing.

Still other research in the economic and metallurgical aspects of oilfield tubular requirements led to the introduction of Spangweld Drill Pipe with flash-welded integral joints, and of Spangseal Tubing notable for its high degree of leak resistance.

That has been the course of progress throughout Spang-Chalfant Division's long association with the petroleum industry. You'll find it worthwhile to keep an eye on other things to come.

NATIONAL BLUE PRODUCTS

Spang-Chalfant Division

THE NATIONAL SUPPLY COMPANY

PITTSBURGH 30, PENNSYLVANIA

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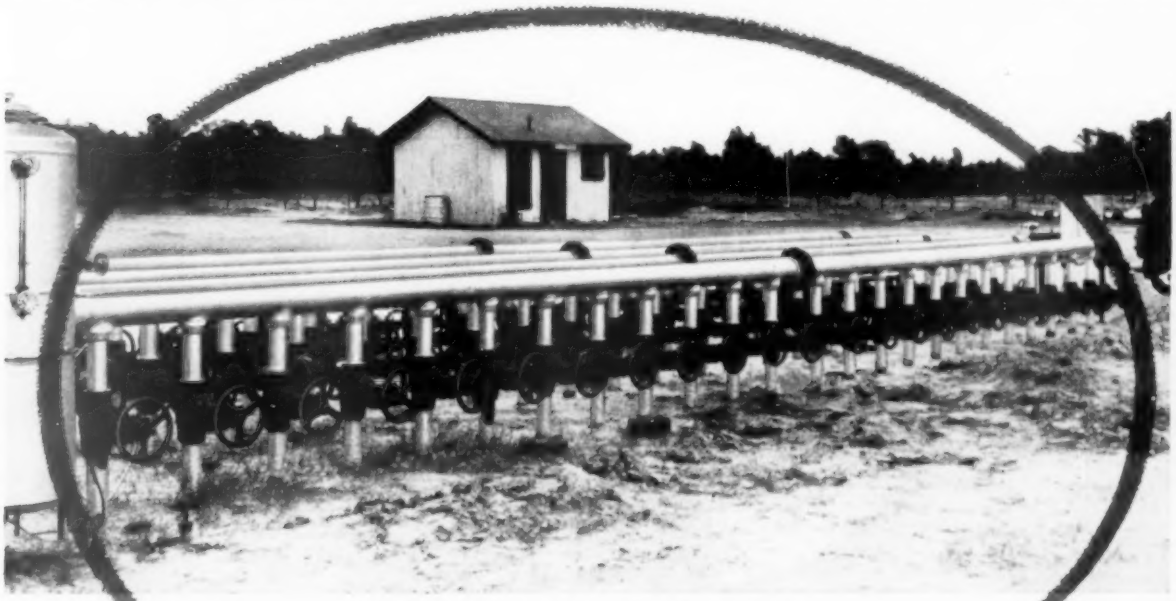
NATIONAL OIL FIELD MACHINERY AND EQUIPMENT
SPANG STEEL PIPE • SUPERIOR & ATLAS ENGINES

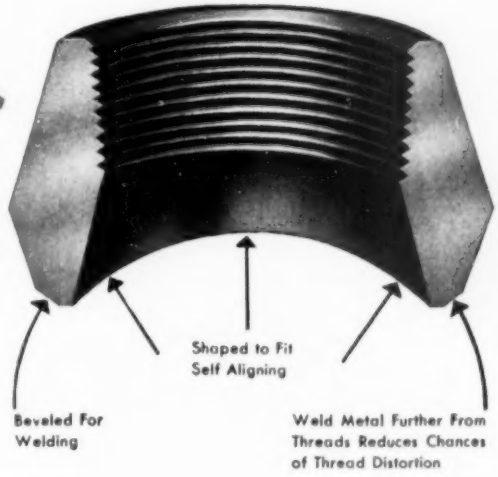
BOOST YOUR PRODUCTION with THREDOLETS and SOCKET WELDOLETS!



ThredOlets at work in L. P. Gas Plant Production Separators. 4" x 2" ThredOlets utilized for branch connections on manifolds subjected to contraction, expansion and vibration. The ThredOlet's short height and wide footing creates rugged branch construction.

Insure production economy in pipe fabrication through the *exclusive* features *engineered* and *manufactured into* ThredOlets and Socket WeldOlets. Production is boosted because you weld *more pieces* per hour!

Instant application and immediate availability will save you time, labor and money in constructing all 90° Threaded and Socket-weld branch connections.



SPECIFY AND USE...
BONNEY THREDOLETS & SOCKET WELDOLETS

FOR COMPLETE ENGINEERING DATA WRITE FOR YOUR BONNEY W-3 WELDOLET CATALOG
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With
Teeth that
really dig
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MONTEBELLO, CALIFORNIA

Fit Tenite plastic pipe with a saw, slip-sleeve joints, cement and brush

Fitting and laying tough Tenite plastic pipe is quick and easy. For example, the pipe is sawed to size, solvent cement is applied to the pipe ends and a thinner to the slip-sleeve coupling; the two ends are then forced into the slip-sleeve coupling to form the joint. In a typical installation, three men easily laid 4000 feet of 4" Tenite pipe in a day; usually eight men are required to lay the same amount of steel pipe.

Extruded of Eastman cellulose acetate butyrate plastic, Tenite pipe offers unusual corrosion resistance to sour crudes, salt water and electrolytic action.

Because of Tenite's extra-smooth walls, paraffin does not adhere to clog the line. And for any given head loss Tenite pipe delivers approximately 40% more fluid than clean steel pipe of the same diameter.

Tenite pipe is made by various companies to which Eastman supplies the plastic compound.
If you need assistance in adapting Tenite pipe to your operation, our technical staff will be glad to help.

For corrosion resistance ask for PIPE MADE OF—

TENITE

an Eastman plastic

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KINGSPORT, TENNESSEE

Sales representative for
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May 14-23

and see the advantages of

TENITE *plastic pipe demonstrated*

Block 208, North Extension

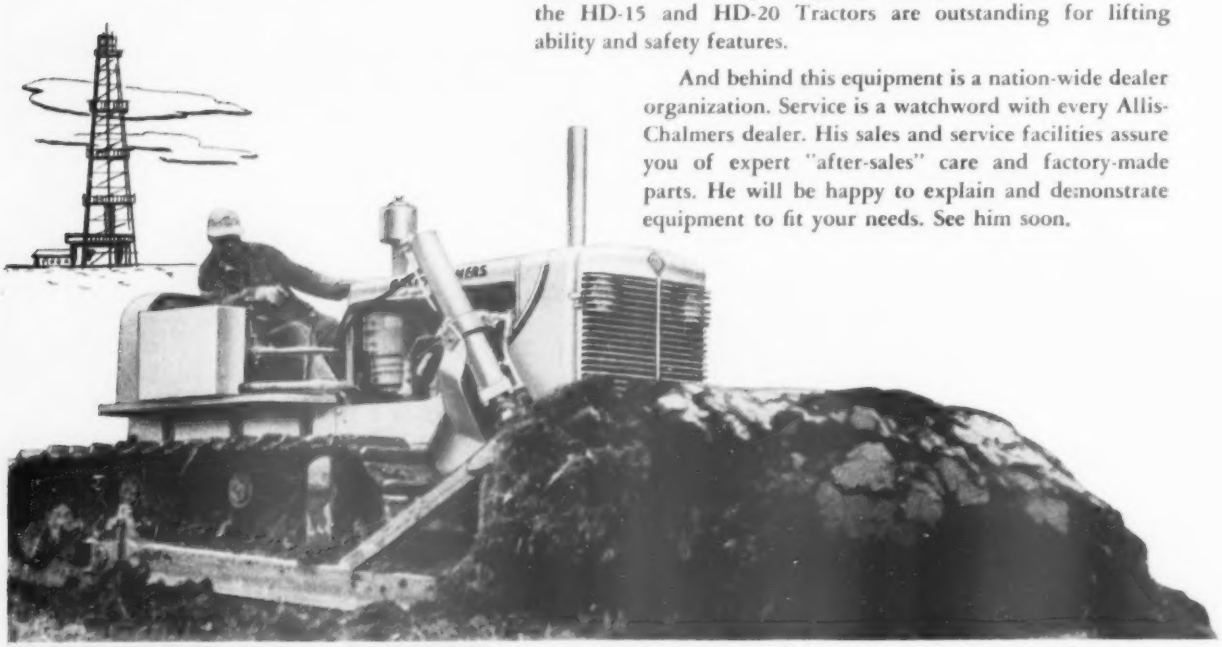
Big Producers on Oil Operations

Allis-Chalmers complete range of earth-moving and materials handling equipment — all designed and introduced in the past few years — is logging big work output and low maintenance figures for contractors, drillers, producers and refiners alike.

Four powerful crawler tractors, 50 to 175 hp. — all built new from the ground up to take on any and all types of dirt and terrain — provide a weight and horsepower range to cover every oil field need. Among the five Allis-Chalmers tandem drive motor graders — ranging from the big, new 104 hp. AD-40 to the efficient, low-cost, 40 hp. Model D — you can be sure of exactly the right machine for your operations.

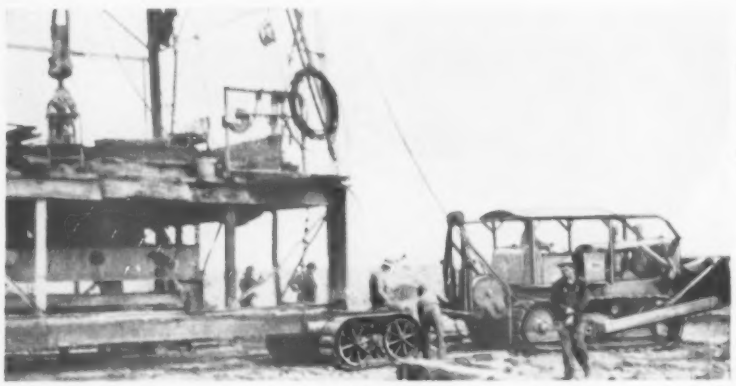
Matched, Allied equipment, too, is setting new standards in the industry. The new no push-beam type dozers are real timesavers on slush pit digging. Heavy-duty side booms for the HD-15 and HD-20 Tractors are outstanding for lifting ability and safety features.

And behind this equipment is a nation-wide dealer organization. Service is a watchword with every Allis-Chalmers dealer. His sales and service facilities assure you of expert "after-sales" care and factory-made parts. He will be happy to explain and demonstrate equipment to fit your needs. See him soon.



Here an HD-9 dozes out an access road on a new lease. Dozer output is speeded up by quick, easy, direct shifting from any forward speed to high reverse.

Slush pits are built deep, narrow — and in a hurry with this HD-9 Tractor and 9X no push-beam dozer. Blade is mounted directly on tractor main frame, providing steeper penetration angle, extra clearance, better balance, greatly increased track oscillation.



Drill rigs are skidded quickly, easily with this HD-15 doing the pulling. Positive seals on truck wheels, idlers and support rollers give sure protection from dirt, grime and moisture — require lubrication only once every *1,000 hours!*

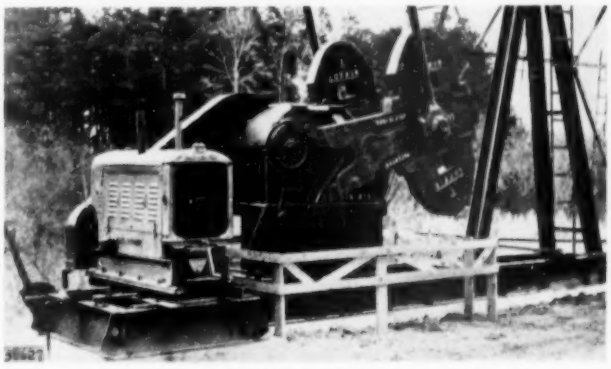
Side booms are finding more and more users in the oil fields. This HD-15 with side boom is placing pipe for a pumping plant. Great stability of tractor permits booming way out — hydraulically extendable counterweights provide maximum clearance on rough ground or in deep mud.

Here an AD-40 finishes right-of-way on a pipeline job. For building access roads, for tough grading, ditching, bank sloping, this big grader leads the parade. New hydraulic power steering provides extra ease of handling, yet retains the accuracy and "feel" of mechanical steering.

Stumps, brush, trees are rammed out in a hurry by this HD-15 clearing land for a drill site. Double reduction final drives and smooth, clean bottom construction give extra clearance when working in woods and on rough terrain.

Low-cost maintenance at its level best — that's this Model D motor grader — shown smoothing out grounds around a refinery. This machine — at one-third the cost of large graders — gives you tandem drive, power hydraulic lift controls, high arch type front axle, ROLL-AWAY* moldboard.

Here an HD-5G, one-yd. Tractor-Shovel loads gravel for road surfacing. Available for all four tractors, in one, two, three and four-yd. sizes respectively, these front-end shovels keep busy on dozens of jobs around lease and refinery.



It costs less to pump with Allis-Chalmers power units. One major oil company reports that a Model E engine ran 9 years and 10 months on round-the-clock service before an overhaul. Available in four sizes through Fred E. Cooper Inc., Allis-Chalmers power unit distributor to the oil industry.

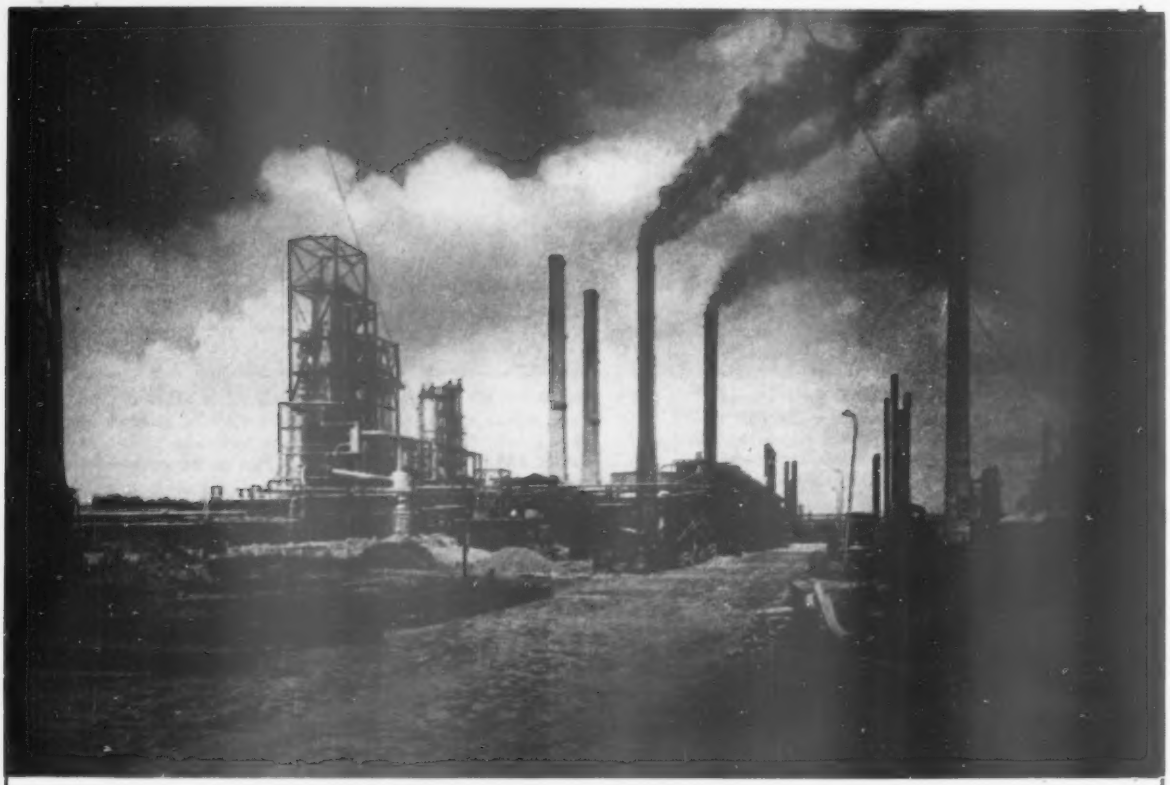
ALLIS-CHALMERS

TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

*ROLL AWAY is an Allis-Chalmers trademark.

Visit our exhibit at the Oil Show in Tulsa

Allis-Chalmers representatives will be at the Oil Show May 14-23 to discuss your needs and to show you the newest and finest in earth-moving and materials handling equipment.



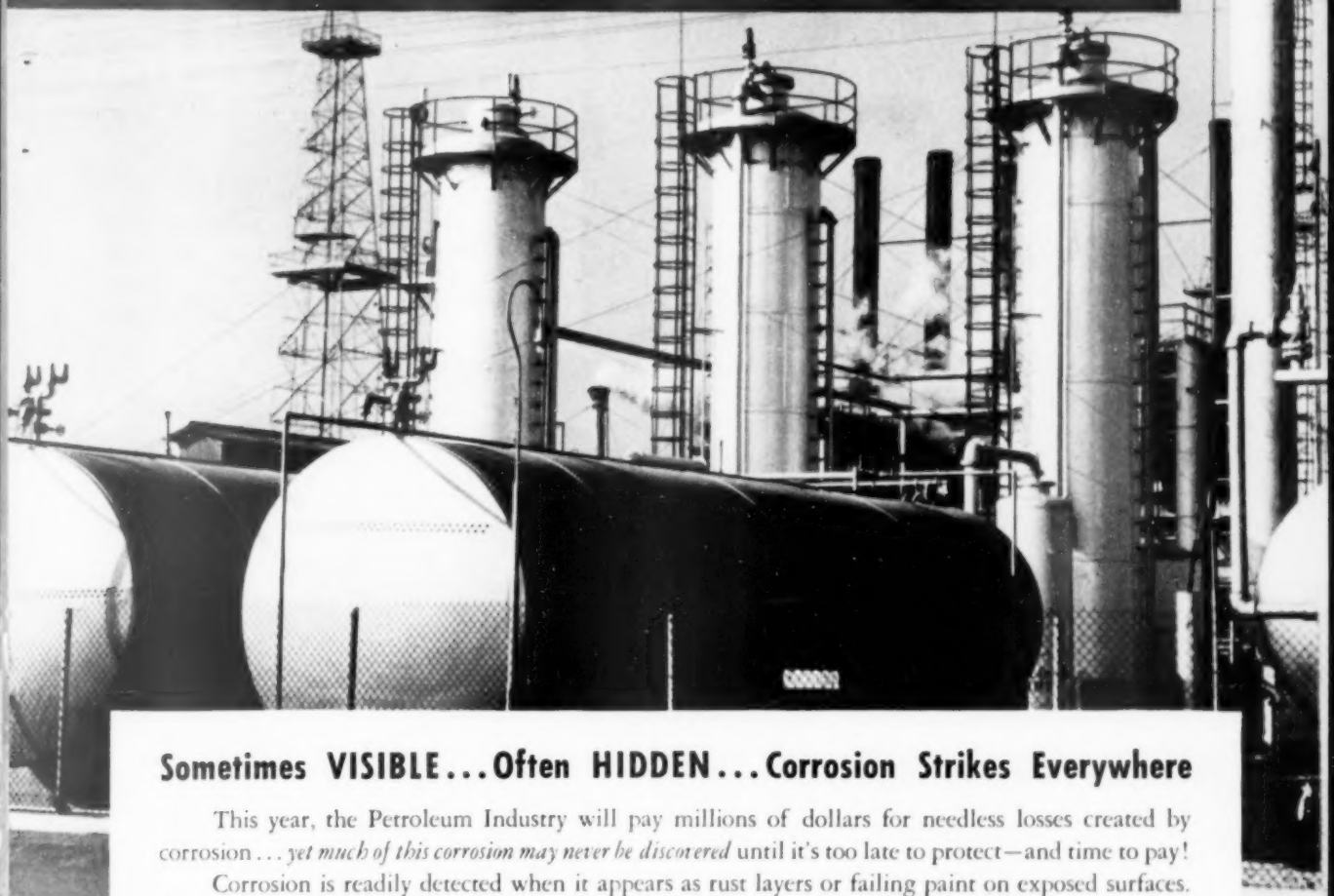
They had a problem... When World-War-Number-Two laid waste many of the largest Oil Refineries in Europe, it also left the world pitiably short of new or replacement plant. In fact Global disruption was complete. Oil Companies were hard put to know where to turn for supplies of more and yet more refining plant. Their normal sources of supply — although working at fever pitch, were still saturated with orders that would take years to complete. But the need for plant was urgent. The Royal Dutch Shell Group solved their problem, in part, when they turned to Harveys. For Harveys have one of the most modern and fully equipped works in the world for the fabrication of all kinds of heavy and light plant for the Oil and many other Industries. *In fact Yours the problem – Harveys the answer!*

FABRICATORS **Harvey** IN METAL

G.A. Harvey & Co. (London) Ltd. Woolwich Road, London, S.E.7

IN THE PETROLEUM INDUSTRY

There's more to CORROSION than meets the eye



Sometimes VISIBLE...Often HIDDEN...Corrosion Strikes Everywhere

This year, the Petroleum Industry will pay millions of dollars for needless losses created by corrosion... *yet much of this corrosion may never be discovered* until it's too late to protect—and time to pay!

Corrosion is readily detected when it appears as rust layers or failing paint on exposed surfaces. But, by far, the major costs of corrosion come from hidden areas—where only minute inspections and constant care can prevent costly failures.

YOU LOSE IN A "WAITING GAME"

Don't wait for rust or other visible signs to appear. Visible or hidden, corrosion will destroy costly equipment..., halt production..., cause unnecessary maintenance shutdowns... and contaminate valuable products. Thus, corrosion dips deep into your profits as it creates needless losses totaling thousands of dollars.

YOU CAN PREVENT NEEDLESS WASTE

Check your tanks, piping and equipment for corrosion's presence. Double-check areas that are vulnerable to *hidden corrosion*. If you would like help, an AMERCOAT Field Engineer will gladly assist you in making a thorough analysis. There is no obligation.

What is AMERCOAT?

AMERCOAT is a method of corrosion control. Not just a single product, but a complete LINE of coatings, individually formulated to solve or control specific industrial corrosion problems.

FOLLOW THE LINE OF *most* RESISTANCE... PROTECT WITH *Amercoat!*

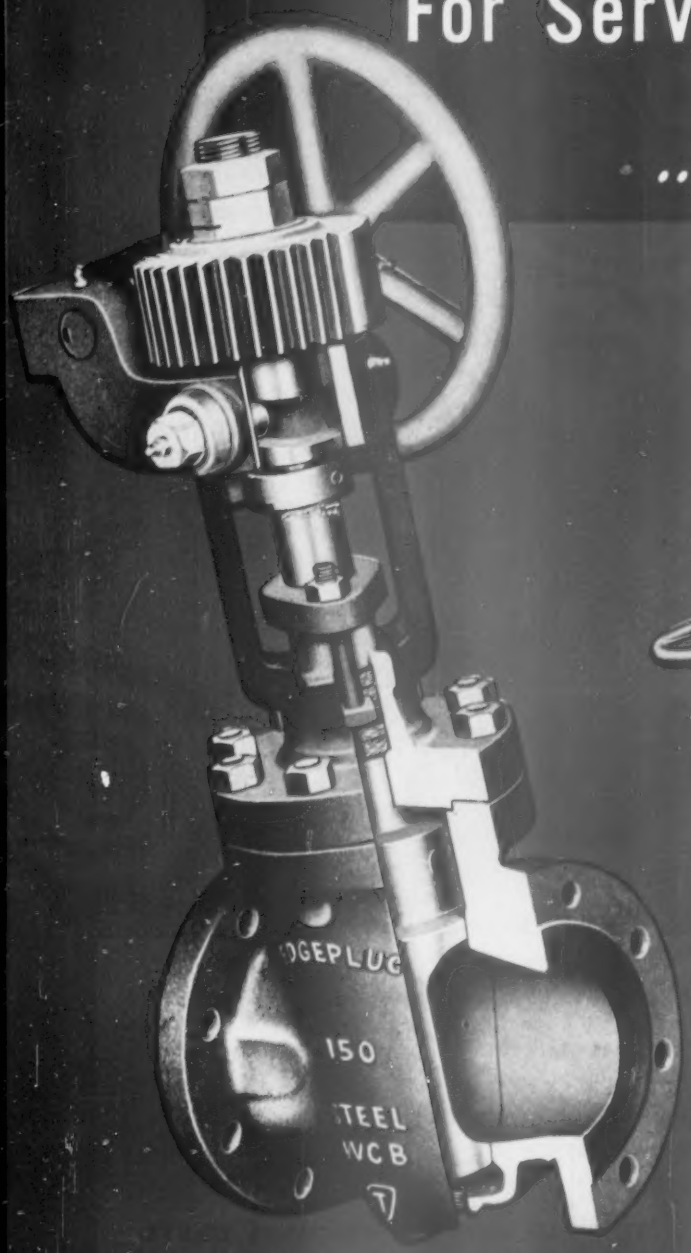
AMERCOAT CORPORATION

4809 FIRESTONE BLVD., SOUTH GATE, CALIFORNIA

CHICAGO, ILL. NEWARK, N. J. JACKSONVILLE, FLA. DALLAS, TEX.

For Service to the Entire

...and Announcing the



The Wedgeplug Dry Plug Valve is a time and money saver. Easy operation, long life, with *no* lubricating costs. A simple mechanical device lifts, turns and re-seats the tapered plug in the body seats in one easy operation. Unrestricted flow through large port openings. Handles solids in suspension. Can be steam jacketed. Send for Catalog 52-W.

WEDGEPLUG VALVE COMPANY, INC.
NEW ORLEANS 18, LA.
An affiliate of
STOCKHAM VALVES AND FITTINGS
BIRMINGHAM 2, ALABAMA

STEEL DRY PLUG VALVES
BRONZE VALVES • IRON BODY VALVES
STEEL GATE VALVES

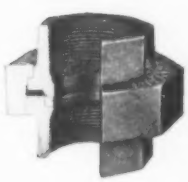
Stockham's Fiftieth

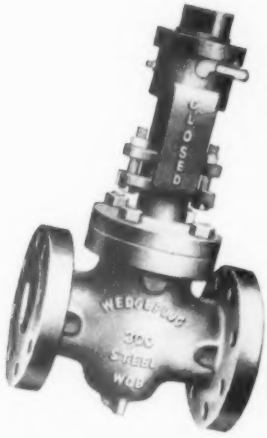
WEDGEPLUG DRY PLUG VALVES AND

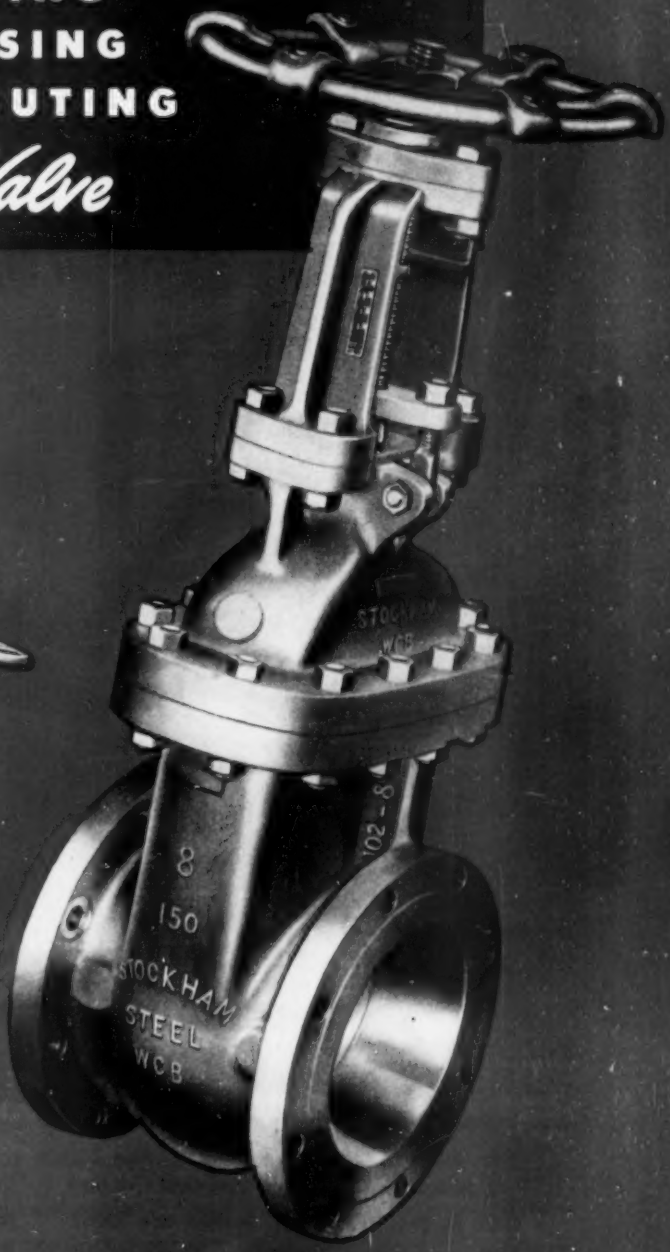
Industry | PRODUCING PROCESSING DISTRIBUTING

New Steel Gate Valve

The new 150 and 300 pound Stockham Steel Gate Valves incorporate the newest design principles to meet the exacting requirements of the petroleum industry. For many years Stockham Cast Iron and Malleable Fittings, Bronze and Iron Body Valves have been recognized for their dependability in every branch of the petroleum industry. Complete catalogs on request.





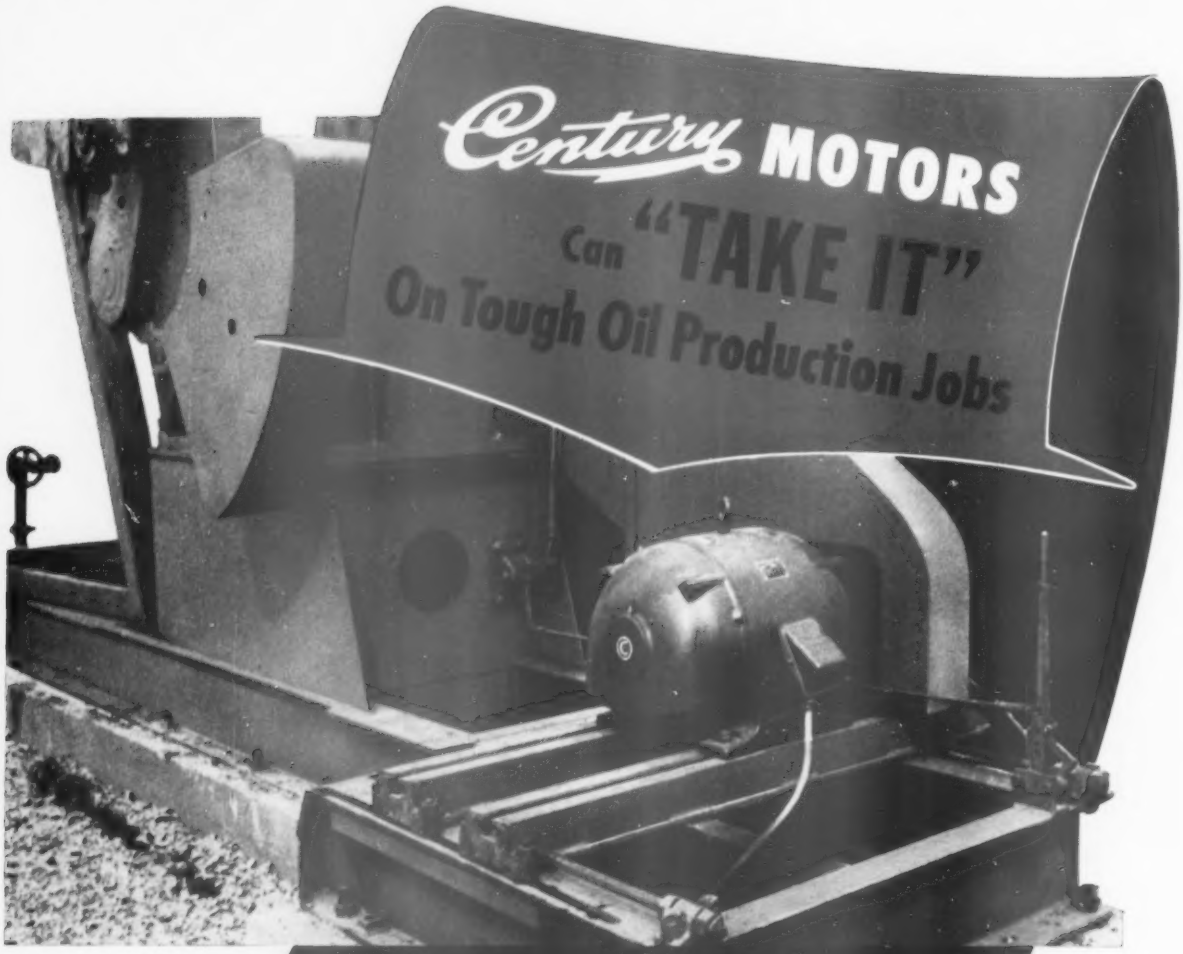


CAST IRON PIPE FITTINGS
Screwed and Flanged
MALLEABLE IRON PIPE FITTINGS

STOCKHAM VALVES AND FITTINGS
BIRMINGHAM 2, ALABAMA
Warehouses and Offices
PHILADELPHIA • CHICAGO • HOUSTON • DALLAS
LOS ANGELES • NEW YORK • BOSTON • ATLANTA
PITTSBURGH • ST. LOUIS • WASHINGTON • SAN FRANCISCO

Anniversary Year

STOCKHAM VALVES AND FITTINGS



High Torque and Rugged Construction Keep Pumping Units on the Job 24 Hours a Day

For pumping units, you'll find that Century high torque, "high slip" motors are ideal. The high torque starts the stiffest pumps easily.

The "high slip" feature saves wear and tear on both your motor and pump. The motor speed pulls down as the load comes on . . . cushions the impact and reduces the shock of the peak load.

For all popular applications in the oil industry, there are Century motors that assure top performance. They're available for single phase or polyphase, in a wide range of types and kinds—in sizes from 1/8 to 400 horsepower. Whether for producing, refining, or distributing petroleum products, it will pay you to specify Century motors.

Offices and stock points in principal cities

726

CENTURY ELECTRIC COMPANY
1806 Pine Street • St. Louis 3, Missouri

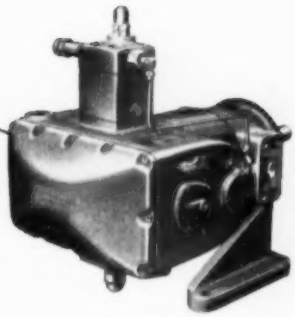
Century MOTORS

See Our Exhibit

OIL SHOW

TULSA MAY 14-23

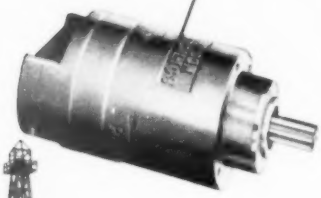
Booths 29N–30N



DENISON HydrOILic EQUIPMENT

meets the toughest oil-field needs for

RUGGED DEPENDABILITY



"The Finest Money Can Buy!"

For more than 25 years, Denison has met Industry's toughest demands for oil-hydraulic equipment – *with the kind of rugged, efficient, high-pressure components that are now winning such wide approval in oil-field operations.*

To meet constantly increasing needs, Denison now offers *today's most rapidly expanding line* of equipment for packaged hydraulic power, hydraulic transmissions, remotely controlled equipment, and other needs for widely adjustable power, speed, and control.

Wherever you need variable speed drives, accurate pressure control, spark-free power transmission, or closely controlled hydraulic motion of any kind, let Denison's HydrOILic Equipment give you the answer.

Write for details, or call your nearest Denison representative.

DENISON HydrOILics

The DENISON Engineering Company

Factory and Home Offices: 1176 Dublin Road, Columbus 16, Ohio

WEST COAST BRANCH
565 N. Prairie St., Hawthorne, Calif.
Telephone: Osborne 5-3230

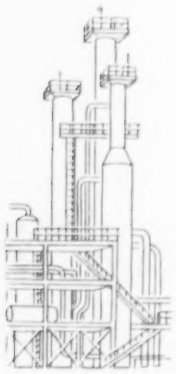
CHICAGO BRANCH
4306 W. 63rd St., Chicago 29, Ill.
Telephone: Reliance 5-7474

HOUSTON BRANCH
1200 Bissonet, Houston 5, Texas
Telephone: Justin 6232

buying chemicals

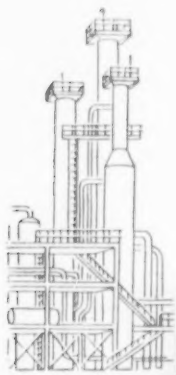
Of all the process industries, petroleum refining is one of the largest consumers of chemicals . . . in both number and quantity. So, when buying chemicals, refiners rate a dependable source of supply second only to quality.

to better advantage



Mathieson measures up to the requirements of a great many petroleum refiners. Thirteen plants, all producing essential raw materials for petroleum refining, assure maximum dependability. Mathieson is known and recognized for quality . . . and has been for over 60 years. But an added advantage is Mathieson's basic production of many chemicals needed for petroleum refining —caustic soda, sulphuric acid, soda ash, ammonia, sulphur, carbonic gas, chlorine, sodium nitrate and sodium chlorite.

from Mathieson



These same advantages will be of benefit to you. You'll be sure of top-quality chemicals . . . multi-plant production facilities provide dependability . . . integrated delivery system assures on-time schedules. You'll find you can buy chemicals to better advantage—at any time —by consulting with Mathieson.

MATHIESON

MATHIESON INDUSTRIAL CHEMICALS COMPANY

Division of Mathieson Chemical Corporation

BALTIMORE 3, MARYLAND

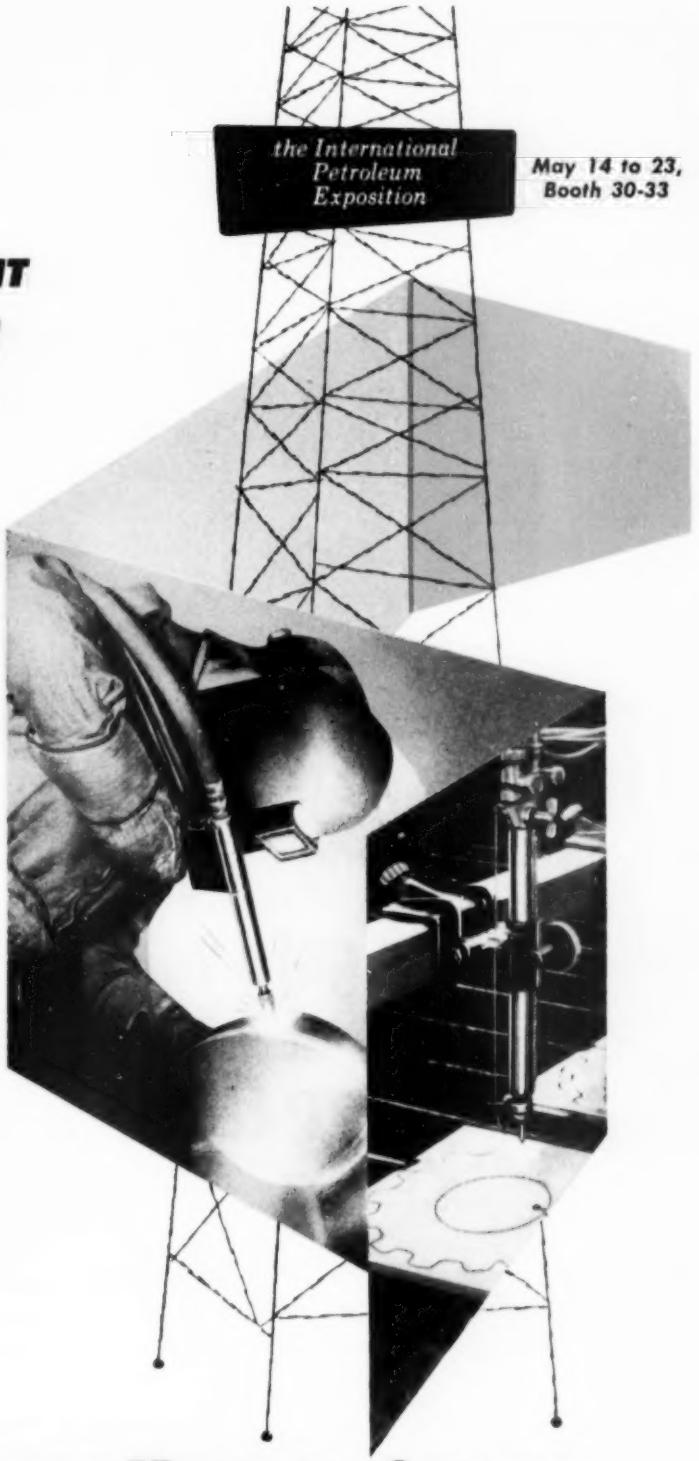
1523

caustic soda • soda ash • liquid chlorine • sulphur • sulphuric acid • bicarbonate of soda • ammonia • sodium nitrate • nitric acid • hydrazine sodium methylate • sodium chlorite • hypochlorite products • dry ice and carbonic gas • ammonium sulphate • ethylene derivatives • methanol

SEE AIRCO EQUIPMENT IN ACTION at TULSA—

the International Petroleum Exposition

May 14 to 23, Booth 30-33



AIRCOMATIC® WELDING . . . both manual and automatic. This inert-gas-shielded, metal-arc process can cut maintenance time and expense. See how Aircomatic can give you top-quality welds in "hard-to-weld" metals and alloys without flux . . . with minimum plate-edge preparation and little or no preheat.

OXYGRAPH GAS CUTTING Watch the Airco No. 6B Oxygraph, *precision cutting* intricate shapes. Note how accurately the Electronic Tracer automatically follows a low-cost drawing. See how the Oxygraph can produce one or many finished parts—at a fraction of the time and cost of any other shaping method.

Prove to yourself how Airco processes can cut your maintenance time and expense. Stop for our demonstration of the automatic Hardfacing Process—doubling the life of drilling tools and tool joints. You will also see the many Airco torches, supplies and accessories ideal for the petroleum industry.

AIRCO®

AIR REDUCTION MAGNOLIA COMPANY

A Division of Air Reduction Company, Incorporated

2405 Collingsworth Avenue, Houston 10, Texas

Beaumont • Corpus Christi • Dallas • El Paso • Fort Worth • Hobbs
Oklahoma City • San Antonio • Shreveport • Tulsa • Wichita Falls

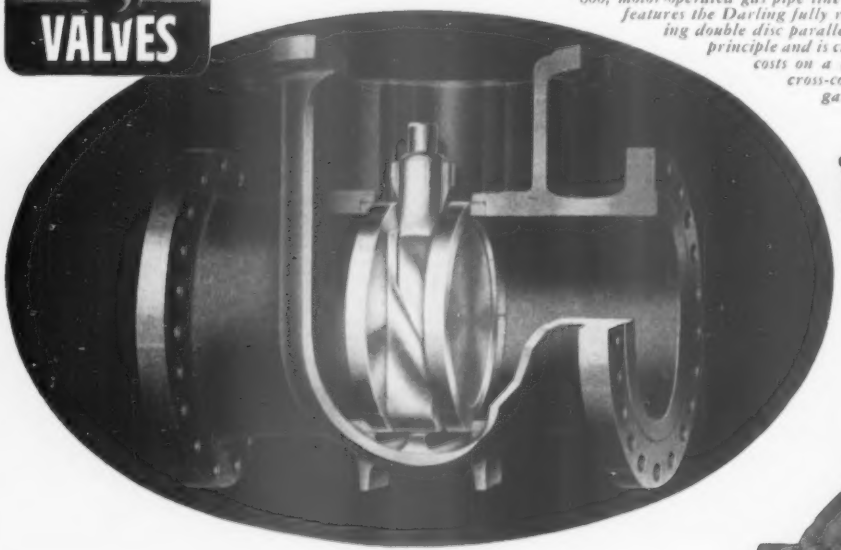
AN AIR REDUCTION PRODUCT

at the frontiers of progress you'll find

Southwestern Headquarters for Oxygen, Acetylene and Other Gases . . . Carbide . . . Gas Welding and Cutting Machines, Apparatus and Supplies . . . Arc Welders, Electrodes and Accessories

DARLING VALVES

FOR PLUS VALUES, JOB-PROVED AGAIN AND AGAIN



Like all Darling gate valves, this big 30" Series 600, motor-operated gas pipe line valve features the Darling fully revolving double disc parallel seat principle and is cutting costs on a major cross-country gas line.

IN NATURAL GAS TRANSMISSION LINES . . .

this Darling gate valve principle PAYS OFF!

TODAY you can avoid a lot of the costly, time-wasting valve trouble normally caused by temperature extremes and line stresses. Darling gate valves . . . *with their fully revolving double disc parallel seat principle* . . . are proving this on line after line.

This unique feature automatically compensates for valve body distortion, assuring *tight closure every time.* What's more, it means *uniform* distribution of disc and seat wear. The pay-off —less trouble, longer valve life, far less maintenance!

SEND FOR DATA

It will pay you to get better acquainted with Darling parallel seat gate valves. They come in a wide range of sizes and types for all gas and oil line requirements. Just outline your particular service needs or ask for a complete descriptive bulletin.

DARLING VALVE & MANUFACTURING CO.

Williamsport 1, Pa.

Manufactured in Canada by Sandilands Valve Manufacturing Co., Ltd., Galt 19, Ontario

PIPE LINE PROGRESS

2700 MILES OF LINE PIPE FOR
Tennessee Gas Transmission System

Early in World War II, Tennessee Gas Transmission Company was authorized to construct its 24-inch natural gas pipe line from south Texas to West Virginia. Completed in 1944, this original line helped to supply fuel for the increasing demands of the central East.

This was but the beginning of a great natural gas transmission system that has continued to grow and expand. Today it serves additional markets in Ohio, New York and the New England states. The illustration shows recent 26-inch looping to increase main line capacity.

2700 miles of pipe in 16-inch, 20-inch, 24-inch and 26-inch diameters have been shipped by A. O. Smith as its part in supplying Tennessee Gas Transmission's requirements for the original as well as subsequent construction, including looping and extensions that have been completed and are in progress.

Ever since 1927, when A. O. Smith began volume production of welded steel line pipe and introduced internal expanded pipe to obtain greater yield strength, it has met the challenge of pipe line expansion. Today, A. O. Smith line pipe constitutes a large part of the petroleum and gas transmission systems that interlace this continent.

FIRSTS by A. O. Smith: Welded line pipe • Internally expanded pipe • Light-wall large-diameter pipe • World's largest producer of large-diameter welded steel pipe.

A. O. Smith Line Pipe is available in a complete range of sizes and wall thicknesses, from 8⅝ in. to 36-in. diameters.

The A. O. Smith Casing Mill is operating at capacity to supply vitally needed casing for the Oil and Gas Industry.

A. O. Smith

LINE PIPE • CASING

Chicago 4 • Dallas 2 • Denver 2 • Houston 2
Los Angeles 22 • Midland 5, Texas • New Orleans 12
New York 17 • Pittsburgh 19 • San Francisco 4
Seattle 1 • Tulsa 3 • Washington 6, D.C.

International Division: Milwaukee 1

DEPENDABILITY THROUGH RESEARCH AND ENGINEERING

Takes any job you give it . . .
Genuine CUTLER-HAMMER

"Oil Country"

WELL PUMPING CONTROL

built for any operating conditions

Cutler-Hammer 9589 oil well pumping controller with 3 coil overloads and time delay relay.

You never see a cover door propped open to keep Cutler-Hammer Oil Well Pumping Control working . . . because the enclosure is adequately ventilated with four screened protected louvres and provided with a heat reflecting aluminum finish.

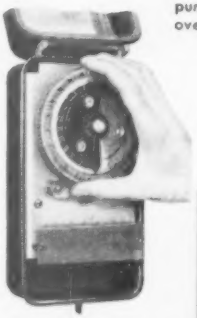
You never have to worry about this control in dusty, insect-infested country, because the famous Cutler-Hammer Vertical Contacts shed dust, the timer is neoprene-gasketed and the clock motor has excess torque.

You can have manual restarting or automatic time-delay staggered restarting, or automatic instantaneous restarting. And you can change from one to another easily.

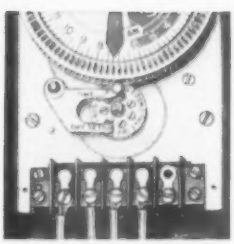
You need not worry about motor burnouts due to single phasing, so serious a threat where long power lines are involved, as full three phase protection with 3 coil overload relays is offered as optional standard construction.

You can change the time scheduling easily; just pull out small, convenient tabs. You can have an automatic day-omission feature. You need not clean up or rebuild the starter after a lightning arrester blows, and the unit type tells at a glance which arrester has blown.

These are just some of the features that make Cutler-Hammer the genuine "Oil Country" Control. Try it and see what performance really is. It has been proved everywhere, on the Gulf, in the Panhandle, in the dry and arid country, in the middle west and in the east. CUTLER-HAMMER, Inc., 1453 St. Paul Avenue, Milwaukee 1, Wisconsin. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto, Ontario.



Cutler-Hammer Program Time Switch gives automatically scheduled pumping, set up easily by means of pull tabs—one for each 15 minute interval.



Day-omission feature—for non-operation any selected days of week.

CUTLER-HAMMER
MOTOR CONTROL
C-H
MEMBER AMERICAN PETROLEUM INSTITUTE

What's going on here?

If you would tap one of these gentlemen on the shoulder and ask him to move aside a little to make room for you—you'd see one of the interesting exhibits prepared for the coming International Petroleum Exhibit.

Of course, there will be many such exhibits—and quite a few of them will be larger, have brighter lights or more machinery. But we think our exhibit will be of very direct interest and importance to every visiting oilman.

For the Ethyl display will demonstrate why the one thing you needn't worry about is your supply of "Ethyl" antiknock compound. Today "Ethyl" fluid is being manufactured in two entirely separate, integrated

(Continued on next page)

Printed in U.S.A.

What's going on here?

(Continued from preceding page)

plants. One in Texas, the other in Louisiana. And there are also storage terminals in California and Delaware—so we can actually supply you from four locations.

We believe this ability to meet your needs from so many directions is one of the most important advantages enjoyed by Ethyl customers. In an emergency our four-point distribution setup could prove to be worth its weight in TEL. And—like Ethyl marketing services, research services and special programs in the farm, bus and truck, and aviation fields—it's all part of the "package" you get when you order antiknock fluid from Ethyl.

If you come to Tulsa to see the Exposition, we certainly hope you'll find time to drop in on us. Our exhibit is in the Kansas Building on the 21st Street side.

ETHYL CORPORATION
NEW YORK 17, NEW YORK

Ethyl service is backed by 30 years of antiknock experience

RESEARCH

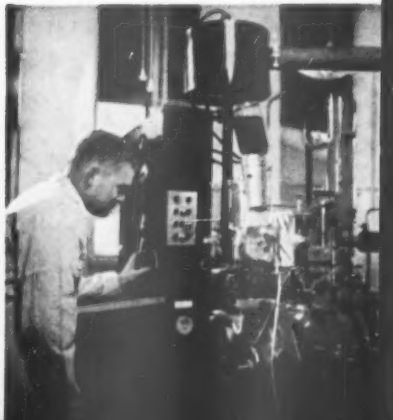
SALES HELPS

FARM SERVICE

ROAD TESTING

SAFETY SERVICE

GASOLINE TESTING



New BROCHURE!

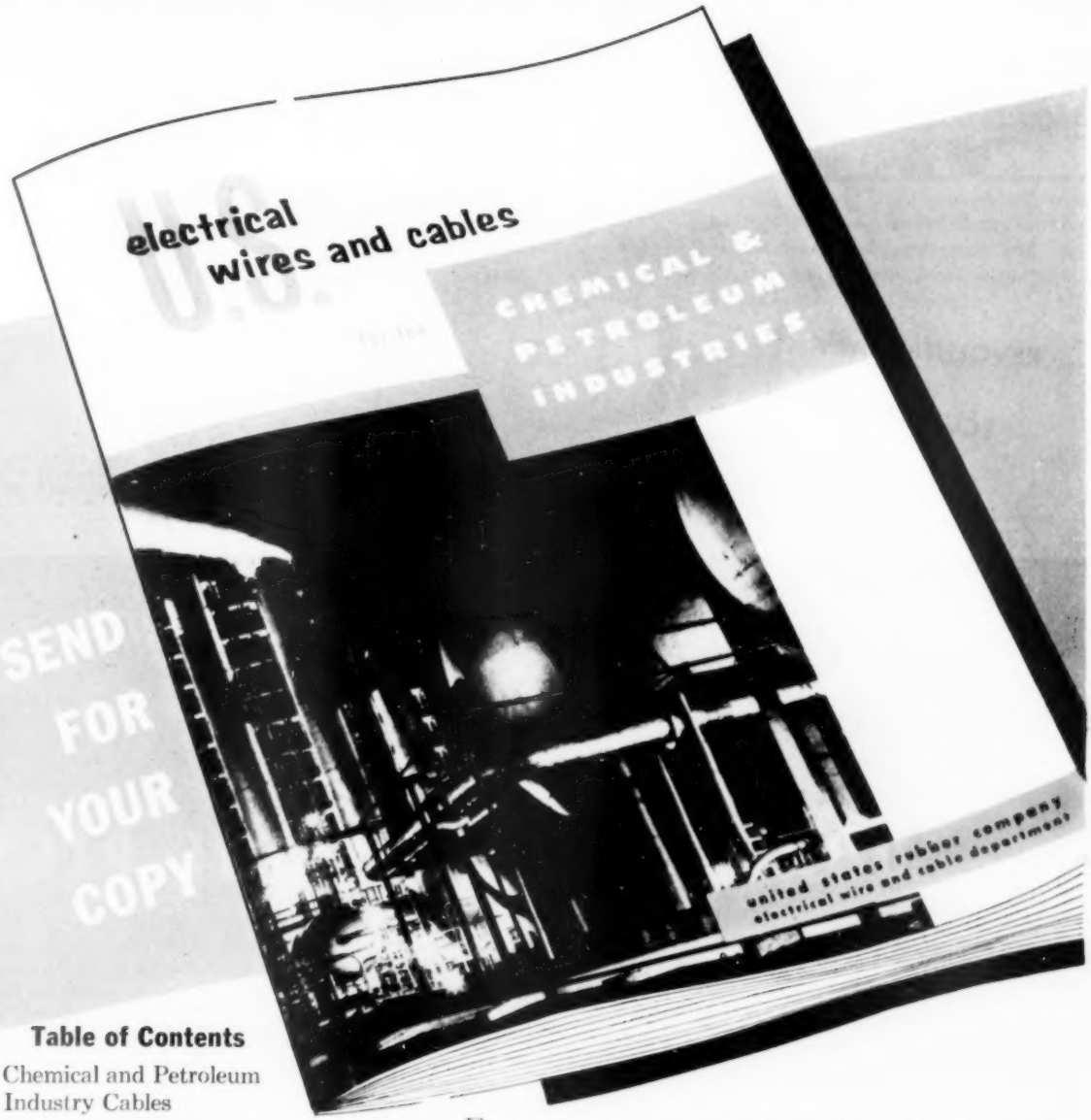


Table of Contents

- Chemical and Petroleum Industry Cables
- Insulation Compounds
- Jacket Compounds
- Portable Cables
- Power Cables
- Control Cables
- Telephone Cables
- Tables

Electrical Wire and Cable for the Chemical and Petroleum Industries must have the right chemical, oil and corrosion-resistant insulations plus the right electrical and physical properties for the job. Insulations and jackets which may be excellent for one type of service may be unsatisfactory in another. United States Rubber Company, a specialist in manufacturing the *right* electrical wires and cables for the Chemical and Petroleum Industries, is the only wire and cable manufacturer growing its own natural rubber, making its own synthetic and plastic insulations.

The brochure shown above shows what "U.S." wires and cables to order for specific applications. Write to address below for your free copy.

UNITED STATES RUBBER COMPANY

U.S. RUBBER

ELECTRICAL WIRE AND CABLE DEPARTMENT • Rockefeller Center, New York 20, N. Y.

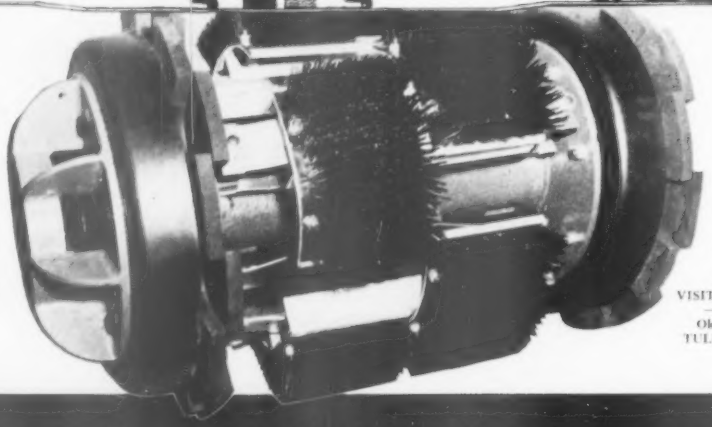
TEXAS
Here's the Pipeline Pig used on two sizes of pipe (16"and 18") making regular runs from Winnie, Texas to Texas City . . .
WINNIE
TEXAS CITY
16"
18"
16"

NEW

REVOLUTIONARY

ECONOMICAL

VERSATILE

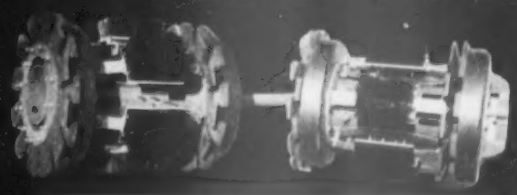


VISIT US AT THE IPE
—BOOTHS 28-29
Oklahoma Building
TULSA — MAY 14-25

NOW - a pipeline pig designed to traverse two sizes of pipe in one run . . . . . .

Williamson

DUAL-SIZE PIPELINE PIGS



BIG INCH SIZE
Which will traverse sharp bends

You actually get two sizes of pigs for the price of one when you use these Dual-Size Pigs . . . and you'll realize a big saving in manpower and operating costs, because fewer scraper traps are needed. These pigs are designed for efficient cleaning of both sizes of pipe and are now in use on many pipelines . . . for instance, a 16" - 18" Combination GPR-11 pig makes regular runs 50 miles across Galveston Bay for on-stream Gas pipeline operation. The Dual-size pig is available in combinations from 6" and up to fit your requirements. Models now in use range in size from 5⅝" x 8" to 30" x 31".

T. D. Williamson, Inc.

THE PIG WITH THE POKE
CLEANS PIPE LINES

P. O. BOX 4038

TULSA 9, OKLAHOMA

REPRESENTATIVES

CANADIAN EQUIPMENT SALES & SERVICE CO., LTD.
Edmonton, Calgary, Toronto, Canada

PHILIP H. MOORE
Durban, Natal, South Africa

LANGLEY y CIA.
Buenos Aires, Argentina

KERR ENGINEERED SALES CO.
Pigs & Tapping Machines
Pittsburgh 22, Pennsylvania

H. E. DAVIS
Los Angeles, Calif.

STUART STEEL PROTECTION CORP.
Bushings & Insulators
Kenilworth, N. J.

BEN W. BRUNDAGE COMPANY
Oakland 11, California

JAMES S. KONE & CO.
Amarillo, Texas

HAMMOND IRON WORKS
Keyes Tank Division
Casper, Wyoming
Provo, Utah

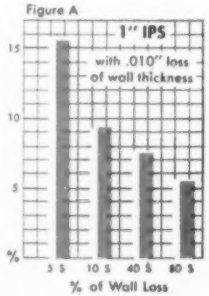
TOD PAZDRAL
Houston 5, Texas

take a closer look at

Stainless STEEL PIPE SIZE Schedules

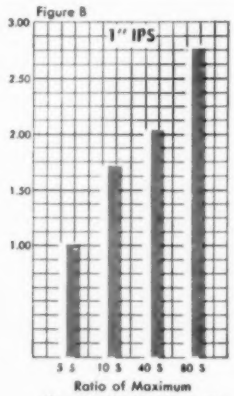
Don't be "penny wise and pound foolish" where stainless steel piping is concerned. The most economical choice does not always imply the least initial cost as working pressure, methods of joining, installation costs and allowance for loss by corrosion are critical factors. This is particularly true where costs resulting from failures in service—replacement of equipment and lost production due to down time—may exceed the initial cost of the piping.

Figure A



% of Wall Loss

Figure B



Ratio of Maximum Allowable Working Pressures

Figure C

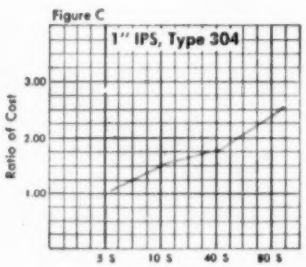
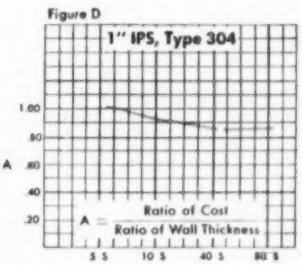


Figure D



CORROSION RESISTANCE

For long service life it is advisable to allow for some loss in wall thickness where stainless piping is employed to combat severe corrosion. As shown in Figure A even a small loss means an appreciable percentage loss of wall thickness in the lighter weight schedules.

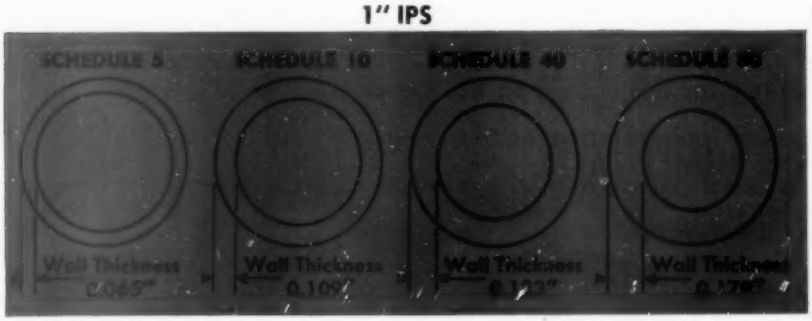
WORKING PRESSURES

As shown in Figure B, the heavier pipe schedules permit higher working pressures, thus perhaps permitting the use of smaller diameter piping, or offering greater flexibility for subsequent changes in operational procedures.

COSTS

Although the lighter schedules cost less, as shown in Figure C, you actually get more for your money with the heavier schedules because the ratio of increase in cost is less than the ratio of increase of wall thickness (Figure D).

1" IPS



Methods of Joining & Installation Costs

From the standpoints of economy and ease of installation, it is extremely important that attention be given to methods of joining, fittings, etc. because:

1. Schedule 40 IPS is the lightest weight pipe specifically designed for threading.
2. Fittings which provide a good thread and also afford structural strength at the joint are not commercially available for lighter weight pipe.
3. Field welding of thin wall pipe is difficult.
4. Misalignment of connections can cause high installation costs.

While various types of fittings are available for the lighter weight pipe schedules, they should be examined carefully as to initial cost, installation cost, working pressure permitted and ease of adaptation to existing lines.

Whatever your stainless piping problems, Mr. Tubes—your B&W Tube representative—can provide valuable assistance. Consult him for advice on the stainless piping or tubing that will afford optimum cost-life ratio under your service conditions.

TA-1709 (G)

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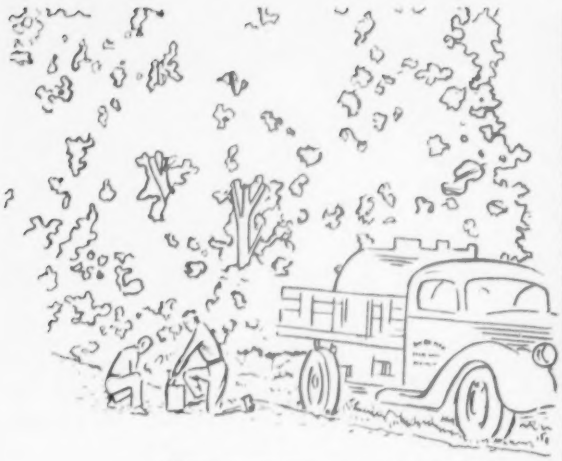

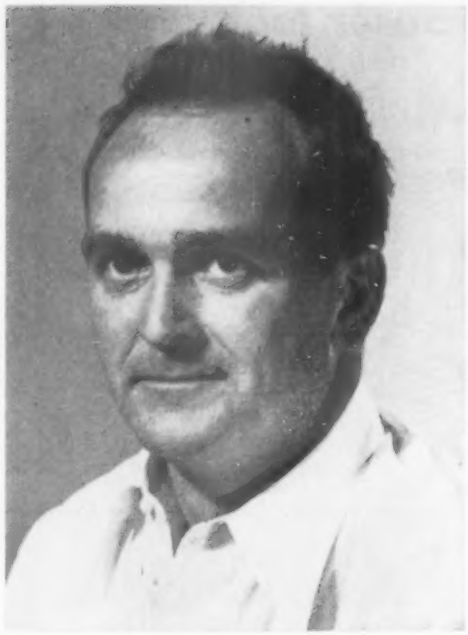

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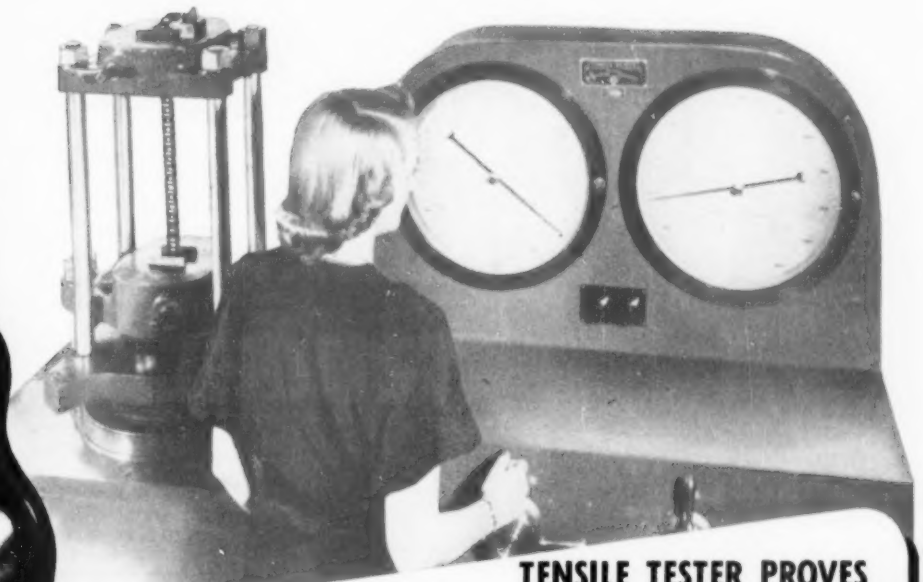

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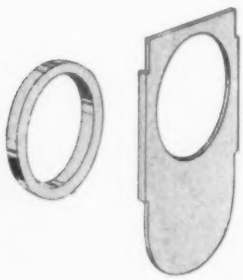

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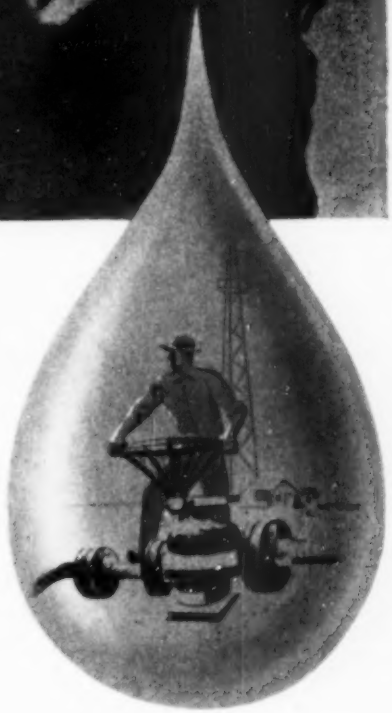

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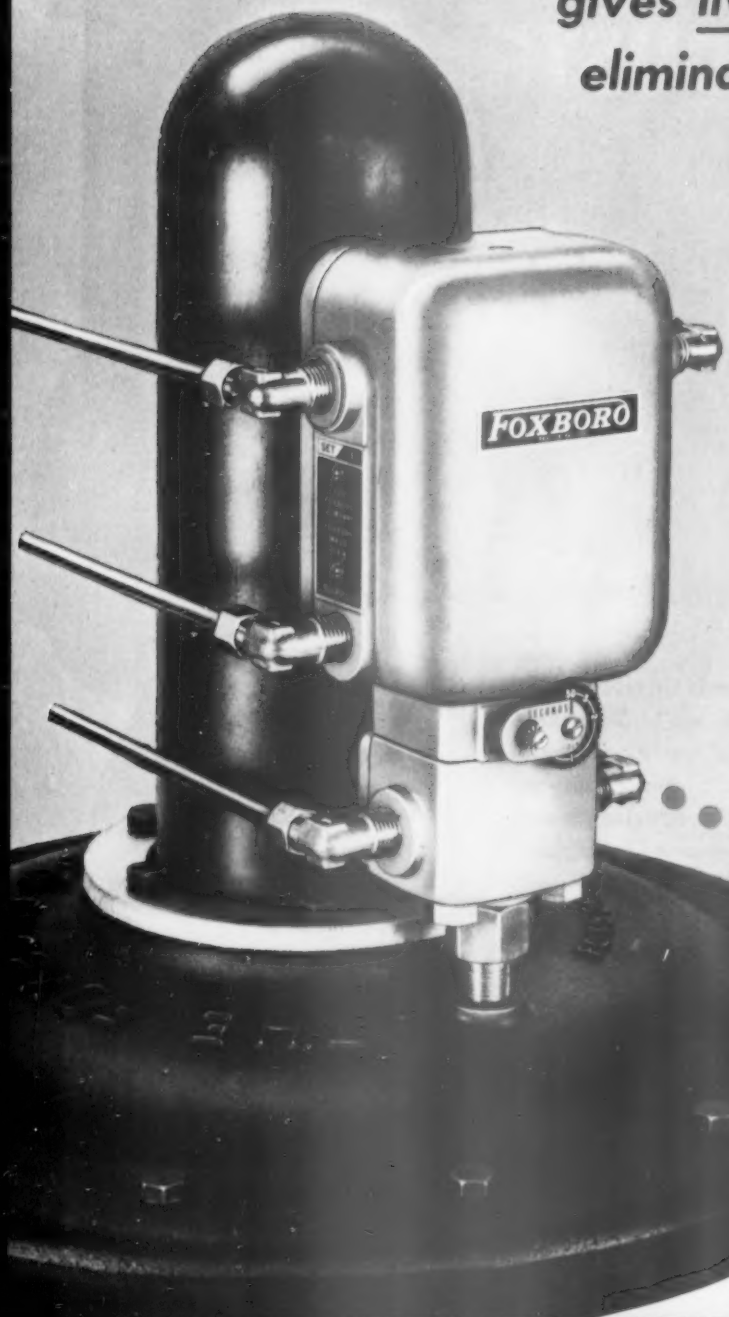
M/59 Consotrol Controller

gives live-balance sensitivity, eliminates transmission lag.

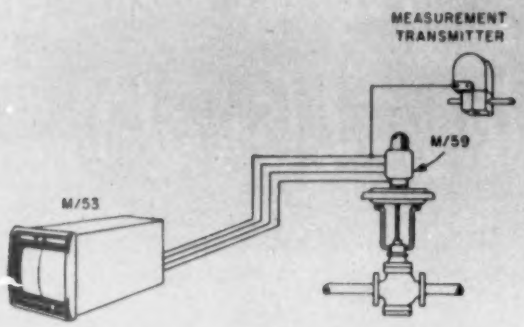


Designed specifically for *dynamic* control of flow, the M/59 Consotrol Controller takes full advantage of the speed and sensitivity of the Foxboro d/p Cell (flow transmitter). It is the direct result of Foxboro basic research into today's flow control problems.

This revolutionary flow controller combines inherently dynamic action with unique simplicity of design. Mounts directly on valve — no transmission line, no lag!

Write for Bulletin 470 which fully describes this outstanding development in flow instrumentation. The Foxboro Company, 605 Neponset Ave., Foxboro, Mass., U.S.A.

DYNAMICALLY



Schematic diagram shows the M/59 Controller as installed in conjunction with Foxboro d/p Cell and M/53 Consotrol Recorder.

- **Valve Mounted** — screws directly on valve motor with heavy duty stainless steel ¼" fitting . . . eliminates "lag" commonly caused by transmission lines.
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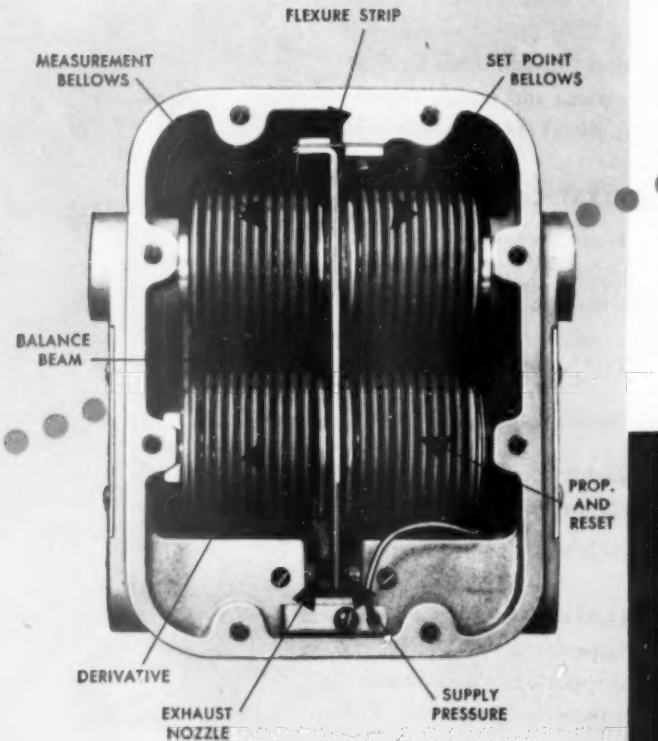
- **Response** — amazingly fast recovery with precise control regardless of load conditions and process upsets. No control point drift. Unaffected by vibration or wide changes in ambient temperature.
- **Seal Valve** — optional feature which permits isolation of controller and remote manual control of process. Integrally mounted to the bottom of the controller.
- **Maintenance-free** — nothing to align, nothing to wear out. Flexure strip fulcrum eliminates friction and wear of conventional type pivots. Tightly gasketed, completely weatherproof.



Unique Live-Balance Design

Photo of the M/59 with cover removed to show the exclusive, simplified live-balance mechanism. Balance Beam, which moves only a few thousandths of an inch to control the valve motor pressure, is flexure-pivoted and positioned between the four bellows. Any pressure unbalance between the set point and measurement bellows will change position of the Balance Beam. The proportional-reset bellows opposes such unbalance and prevents control point drift, while the fourth bellows provides the desirable amount of derivative action.

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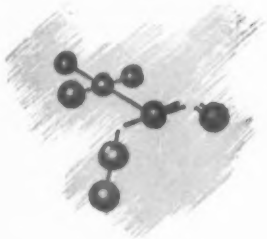

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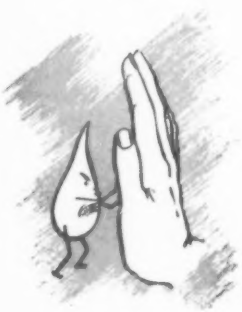

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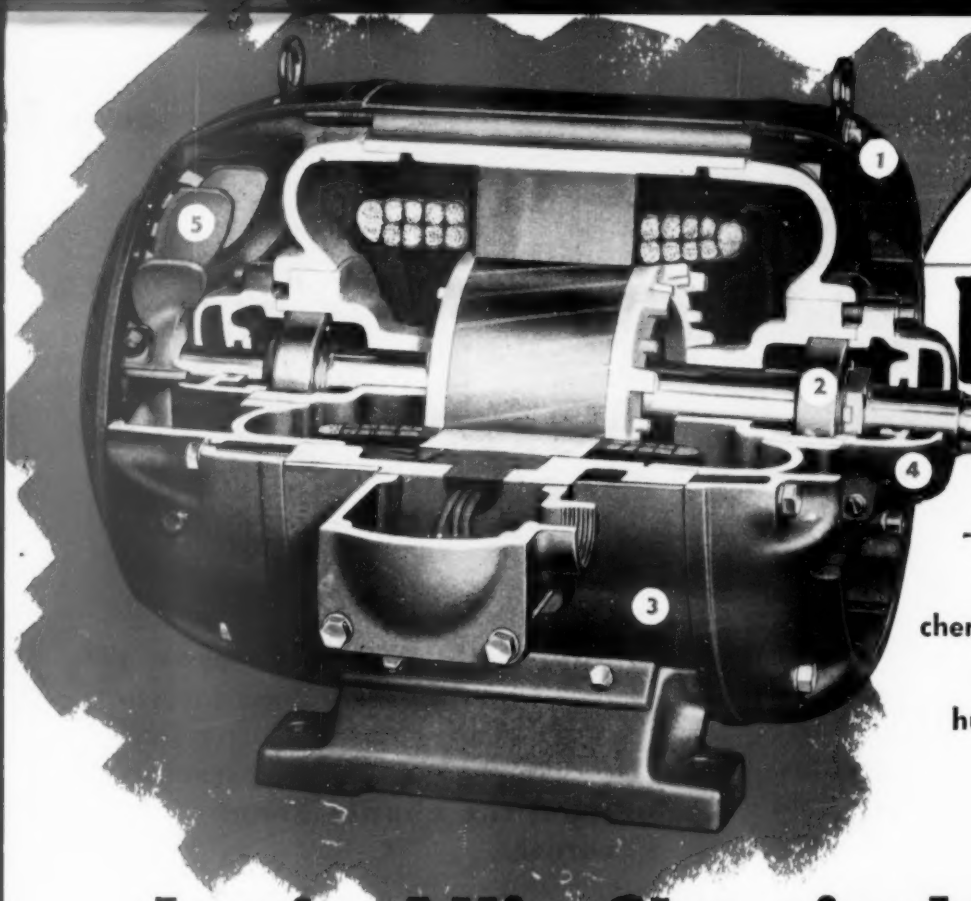

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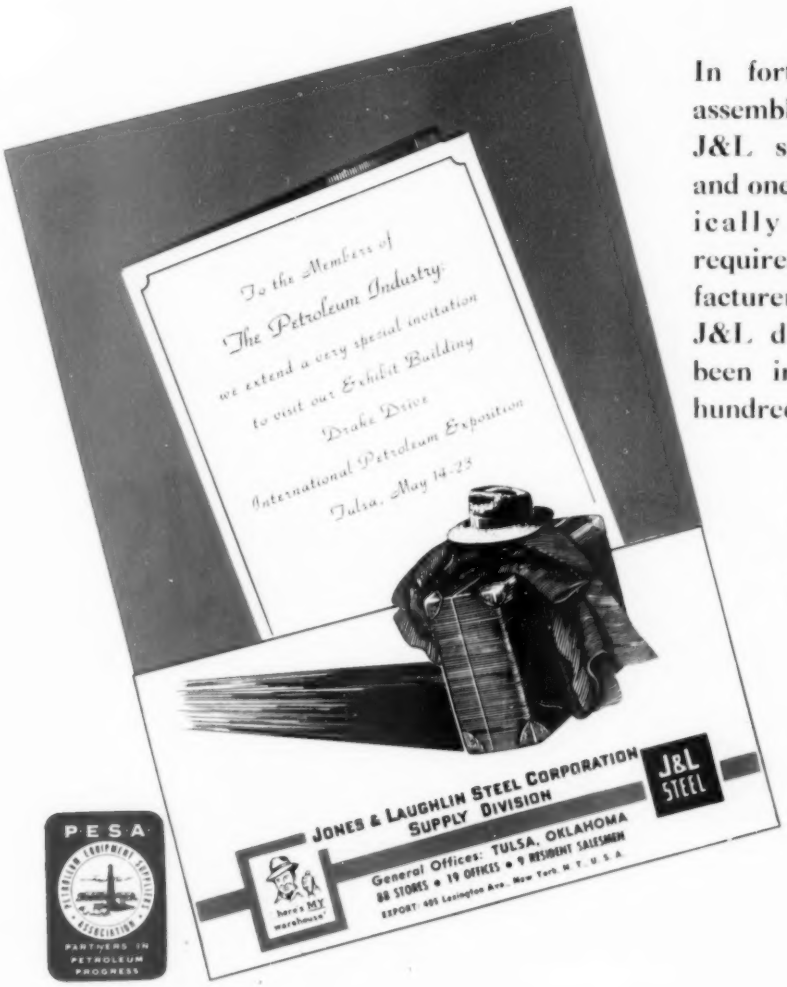
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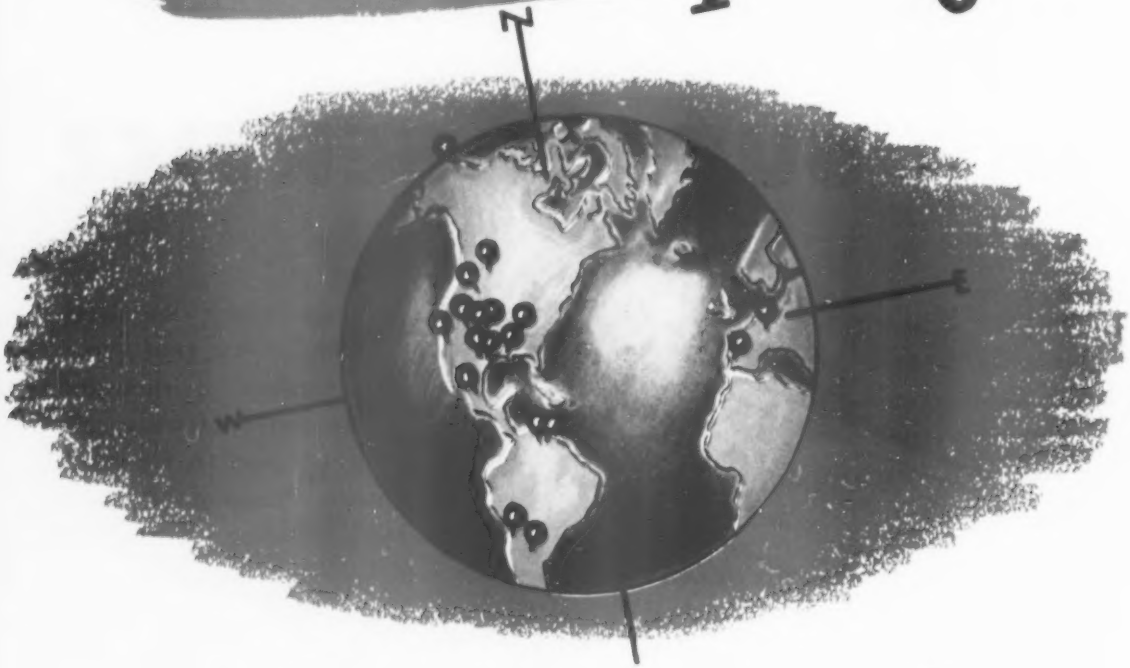

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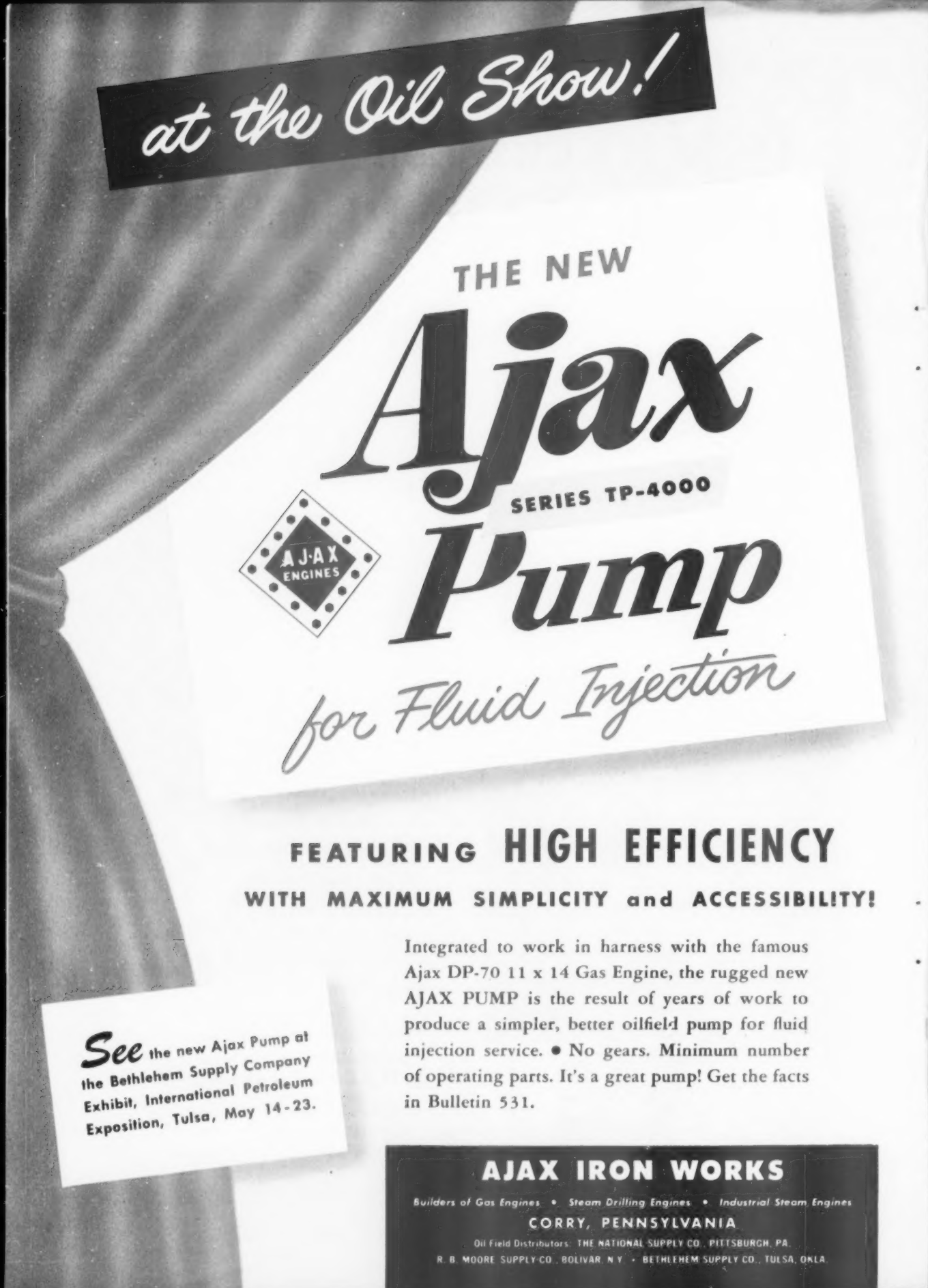
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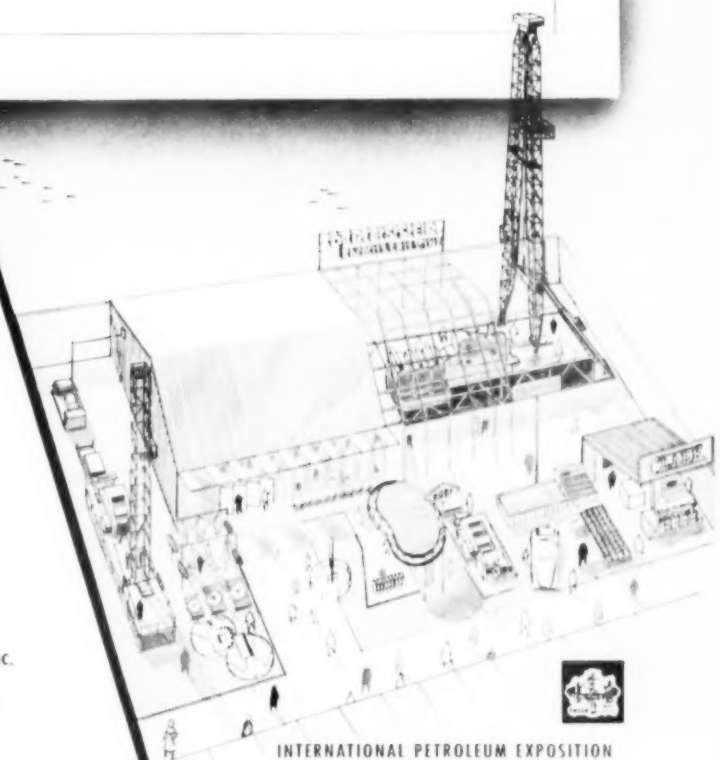

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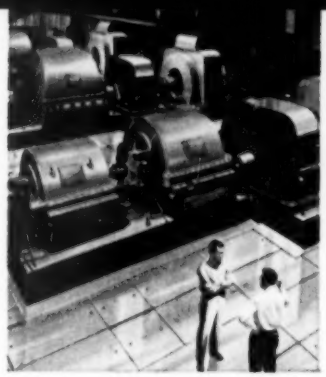


Roots-Connersville Blower Division, ***Connersville, Ind.*** Rotary positive blowers, gas pumps; centrifugal blowers, exhausters; positive displacement meters.

Companies' services to the Oil Industry is the Dresser plus +

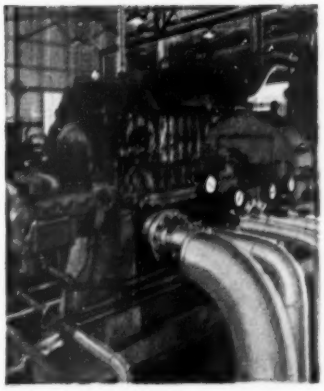
Security Engineering Division, ***Whittier, Calif., Dallas, Tex.*** Rock bits, reamers, casing scrapers, reamer rock bits, coring bits, Securaloy.

Clark Bros. Co. Division, ***Olean, New York.*** Engines and compressors — gas, steam and diesel driven.

Ideco Division, ***Dallas, Beaumont, Tex., Torrance, Calif.*** Derricks, drawworks, rambler drilling rigs, traveling blocks, rotary tables.

Kobe, Inc., Division, ***Huntington Park, Calif.*** Complete hydraulic oil field pumping systems, including the Kobe Free Pump.

Pacific Pumps, Inc., ***Huntington Park, Calif.*** Centrifugal pumps, deep oilwell plunger pumps, hot oil and boiler feed pumps.



Dresser Manufacturing Division, ***Bradford, Pa.*** Oil and gas and pipe couplings, fittings and sleeves — rolled and welded rings — welding fittings and flanges.

the gypsy rig...

on the job...completes the job FASTER!

Put Economy into your drilling, workover, or servicing operation with a work-proved RAMBLER RIG. Available with a wide range of drawworks sizes and horsepower combinations (150 to 500 hp), they are equipped with hydraulically raised KWIK-LIFT MASTS which are furnished in heights from 66' to 103'. RAMBLER RIGS are designed to drill and complete shallow to medium depth wells, and to service the deepest wells drilled. They combine the IDECO HYDRAIR HOIST* with its power plant and the IDECO KWIK-LIFT MAST in a single piece of equipment . . . transported rigged-up . . . ready to operate in minutes after moving on location.

*HYDRAIR — HYDRAULIC POWER . . . AIR CONTROLS . . . AIR CLUTCHES.

IDECO RAMBLER RIGS

For additional information on the many RAMBLER RIG sizes and horsepower combinations . . . write for bulletin KM-51.

IDECO
ONE OF THE DRESSER INDUSTRIES

A DIVISION OF DRESSER EQUIPMENT CO.
Headquarters:
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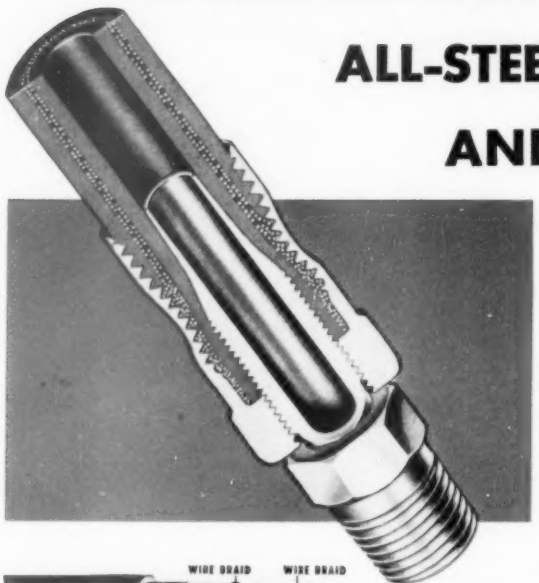
TULSA MAY 14-21

See it on display —
The HYDRAIR 35 RAMBLER RIG

Make Economical "On-the-Spot" Repairs with

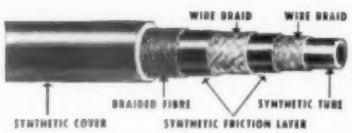
WEATHERHEAD

ALL-STEEL REUSABLE HOSE ENDS AND INDUSTRIAL HOSE

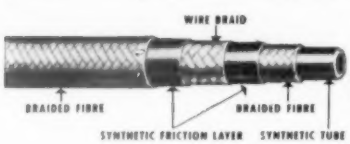


When men and machinery are idled by breakdowns in hydraulic lines, you lose time and money. Cut these losses to the bone by stocking Weatherhead All-Steel Reusable Hose Ends and Industrial Hose for "on-the-spot" repairs.

Weatherhead Hose Ends are precision made for fast, easy attachment and for perfect fit that insures leakproof connections. All-steel construction means you can use them again and again under rugged operating conditions. Weatherhead Hose meets every industrial need with a size range from ¼" to 2" I. D. for low, medium, medium-high and high pressure applications.



H-25 High-Pressure Hose, double wire braid reinforcement and tough, non-fraying synthetic cover for trouble-free service.



H-69 Medium High Pressure Hose, wire braid reinforcement; impregnated cotton cover that requires no stripping to attach ends.

plus three other synthetic covered types for low, medium and medium-high pressure uses

WRITE TODAY for Catalog H-1451 with details on hose ends and hose you can stock for "on-the-spot" repairs.
The Weatherhead Company, Dept. B-2, 300 East 131st St., Cleveland 8, Ohio.
In Canada: The Weatherhead Company of Canada, Ltd., St. Thomas, Ontario.

Weatherhead Industrial Warehouse Distributors in all principal cities

ATTENTION OIL SUPPLY HOUSES!

Here's another Weatherhead First! A "Show 'Em and Sell 'Em" unit that you can stock with bulk hose and fittings your customers regularly use. Get details and price data by writing today to Weatherhead Industrial Div., Cleveland 8, Ohio.

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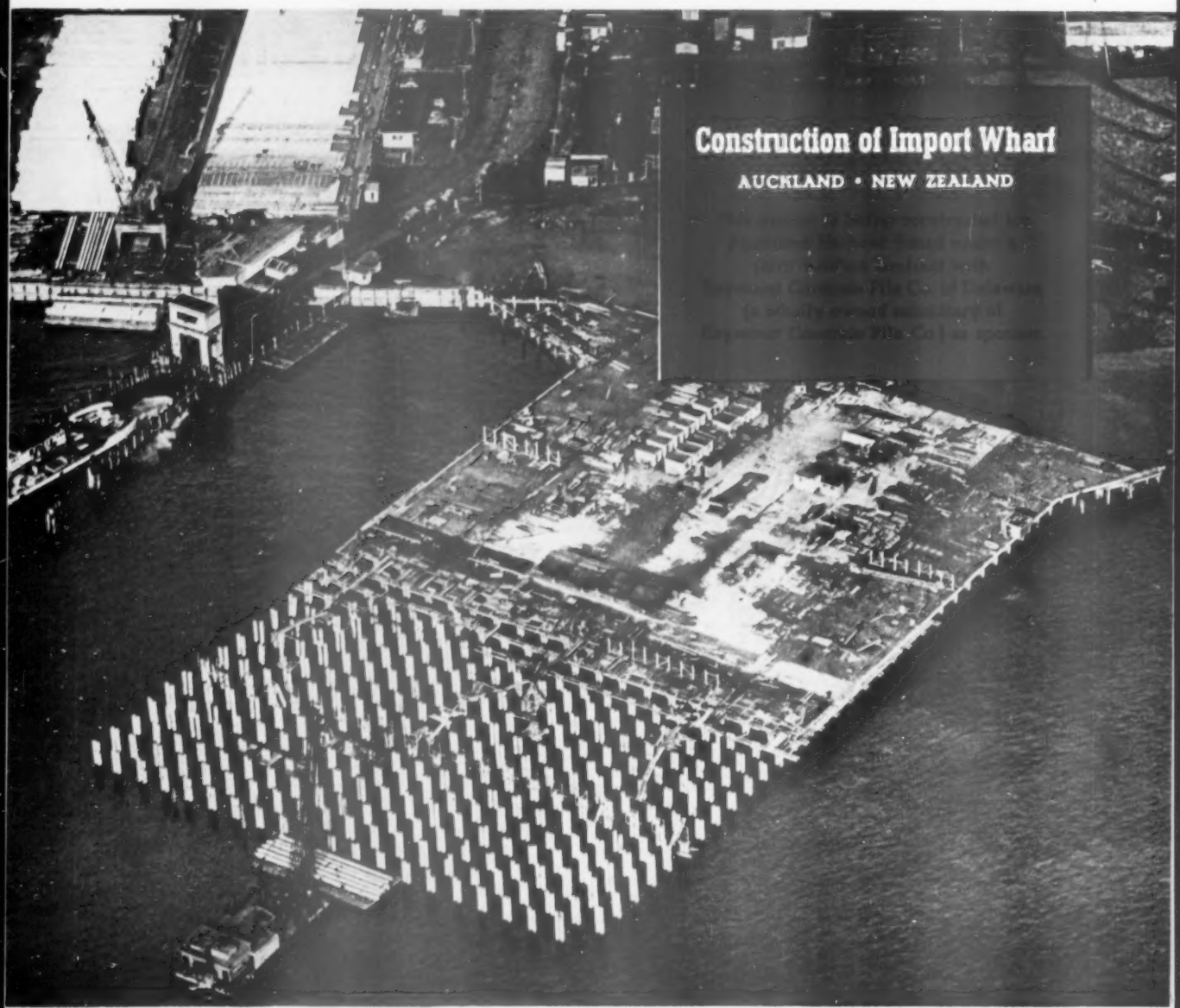
FIRST IN HYDRAULIC CONNECTIONS

DOWN UNDER with RAYMOND



A Raymond-supervised organization is constructing an ocean freight terminal in Auckland, which includes a large reinforced concrete pier of earthquake-resistant design, equipped with rail, warehouse and auxiliary facilities. When completed by mid-1953, the new facilities, providing berthing space for four big ocean freighters, will increase the capacity of the port by some 550,000 tons annually . . . another outstanding example of Raymond's service to the ports of the world.

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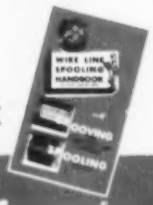
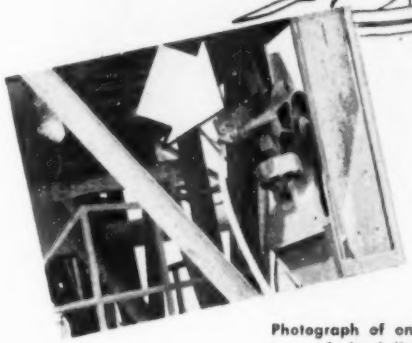
THE SCOPE OF RAYMOND'S ACTIVITIES . . . *FOUNDATION CONSTRUCTION* . . . *SOIL INVESTIGATIONS* . . . *IN-PLACE PIPE LINING* . . . *HARBOR AND WATERFRONT IMPROVEMENTS* . . . *SPECIALIZED CONSTRUCTION*

PAGES FROM THE LEBUS WIRE LINE SPOOLING HANDBOOK



Cutting Off Is Important to Wire Line Performance



Photograph of one type of dead line clamp recommended so that the line can be slipped through safely and quickly to prepare for making drum end cut-offs when changing the load-lifting position of the wire line on the drum, the crown block and traveling block sheaves.

You may think the above cartoon is silly, but this is actually how some drum end cuts are made. LeBus *does not* recommend a system such as this.

So that the operator can get the best line performance and greatest amount of line service per dollar spent, it is very important that he use a regular system of moving the line forward and cutting off at the drum. Drum end cuts should be made according to ton-mile records, and the number of feet cut off should be based on drum core circumference. The cut off portion should be an even number of wraps plus one-half or one-third. This procedure changes the load lifting position on the crown block, traveling block, sheaves and drum core where the line has had excessive wear, and these load lifting positions should be checked carefully for bad sections. In case of excessive line punishment after pulling on stuck drill pipe, or setting heavy strings of casing, the line should be inspected thoroughly and positions should be changed more often.

The LeBus Grooving and Spooling System* offers many time-saving advantages for cutting off. The LeBus method of spooling and their cutting-off formula is fully explained and demonstrated to crews at the time the grooving installation is made so that every advantage pays off for the operator.

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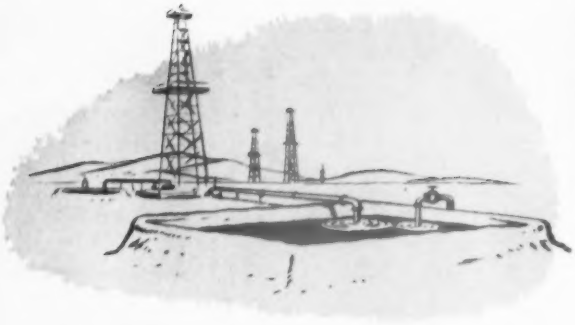
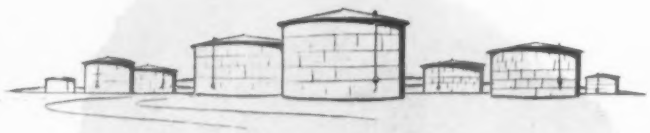
WRITE FOR FREE COPY LEBUS WIRE LINE SPOOLING HANDBOOK

*Patented and Other Patents Pending

we've come a long way!...



from this In the early days of the petroleum industry, crude oil was stored in open pits. Measurement was "by guess or by gosh" and no consideration was given to evaporation loss.



to this With the increase in value of crude oils, conservation practices and accurate accounting of stocks became necessary. Two or more tanks were used for measurement and storage purposes.

to this Today, SMITHway Positive Displacement Rotary Meters combined with SMITHway *functional accessories* offer the ultimate in efficient pipe line operation. In addition to accurate measurement, they permit reduced tankage and real estate investment, increased thru-put with the same expense and reduction in idle inventory stocks. Write today for complete information.

79th YEAR 1874 · 1953

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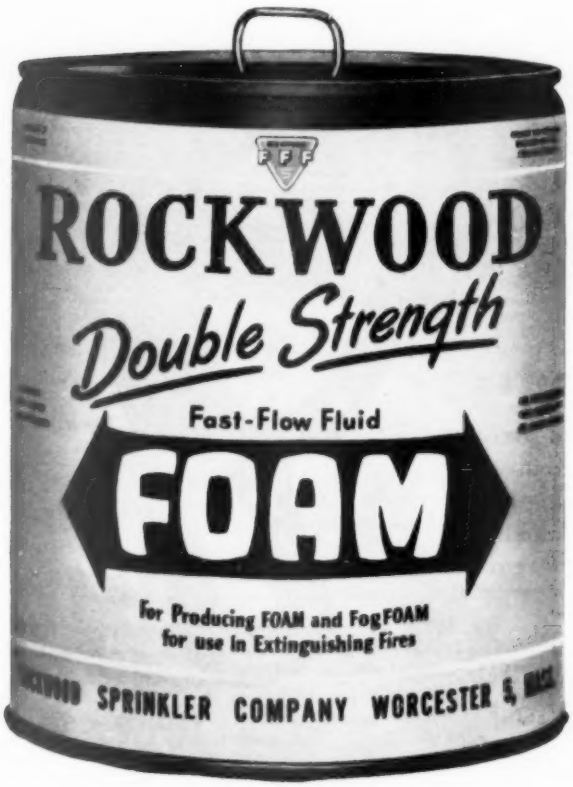
Quenches Quicker!

. . . with Less Water

that's the Short-Short Story of Rockwood Fire Fighting Aids

That's why fire-fighters like to work with Rockwood's equipment. Take for instance our new contribution to modern fire fighting, the Rockwood Double Strength FOAM Liquid which has many important advantages. Three of these are:

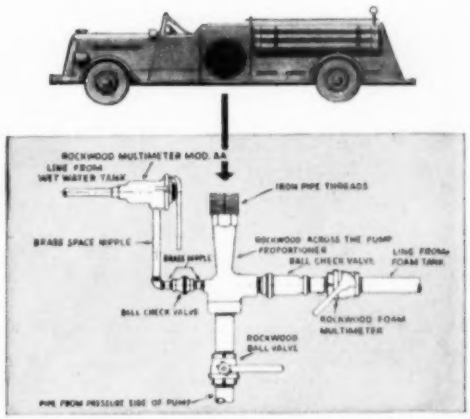
- 1. more fluid
- 2. faster spreading
- 3. flows freely at sub-zero temperatures



Rockwood's new Double Strength FOAM Liquid will put out fires in flammable liquids faster and at lower cost. Three parts of FOAM liquid mixed with 97 parts of water form an excellent foam blanket that will quickly re-seal if broken. Double Strength FOAM Liquid is more fluid, faster spreading and flows freely at sub-zero temperatures (−15° F.) It is quicker to put into action, covers burning surfaces faster, seals off combustible vapors completely and flows freely around obstructions. This foam blanket has proved its ability to extinguish large spill fires in gasoline with maximum speed and safety to firemen.

ROCKWOOD SPRINKLER COMPANY

Engineers Water . . . to Cut Fire Losses



Accurate Mixing Assured: Automatically feeding Double Strength Foam or Wet Liquid into hose lines, Rockwood's Model Dual "B" Around-the-Pump Proportioner is designed for use where pressure is maintained by a pump from either draft supply or booster tank. Multimeter settings admit proper amounts of wetting agent for varying nozzle discharges and solution strengths.

Special Fire Truck Proportioning Systems for FOAM Liquid and Wetting Agents

Trucks for crash-rescue fire fighting, at airports or for handling spill fires in an oil refinery require special proportioning systems for large volume FOAM discharge through several FOAM turret and hand line nozzles.

Custom engineered proportioning systems to meet these and other unusual requirements are a Rockwood specialty. If you have such hazards let us engineer a proportioning system to fill your needs.

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Test the new "Non-Slip" Handwheel at the exhibit. It's Lunkenheimer's newest contribution to efficient valve performance. Whether your hands are dry or greasy, the "Non-Slip" Handwheel provides a cool, firm grip . . . makes it easy to close the valve tight. Try it yourself with the unique demonstrator at the show.

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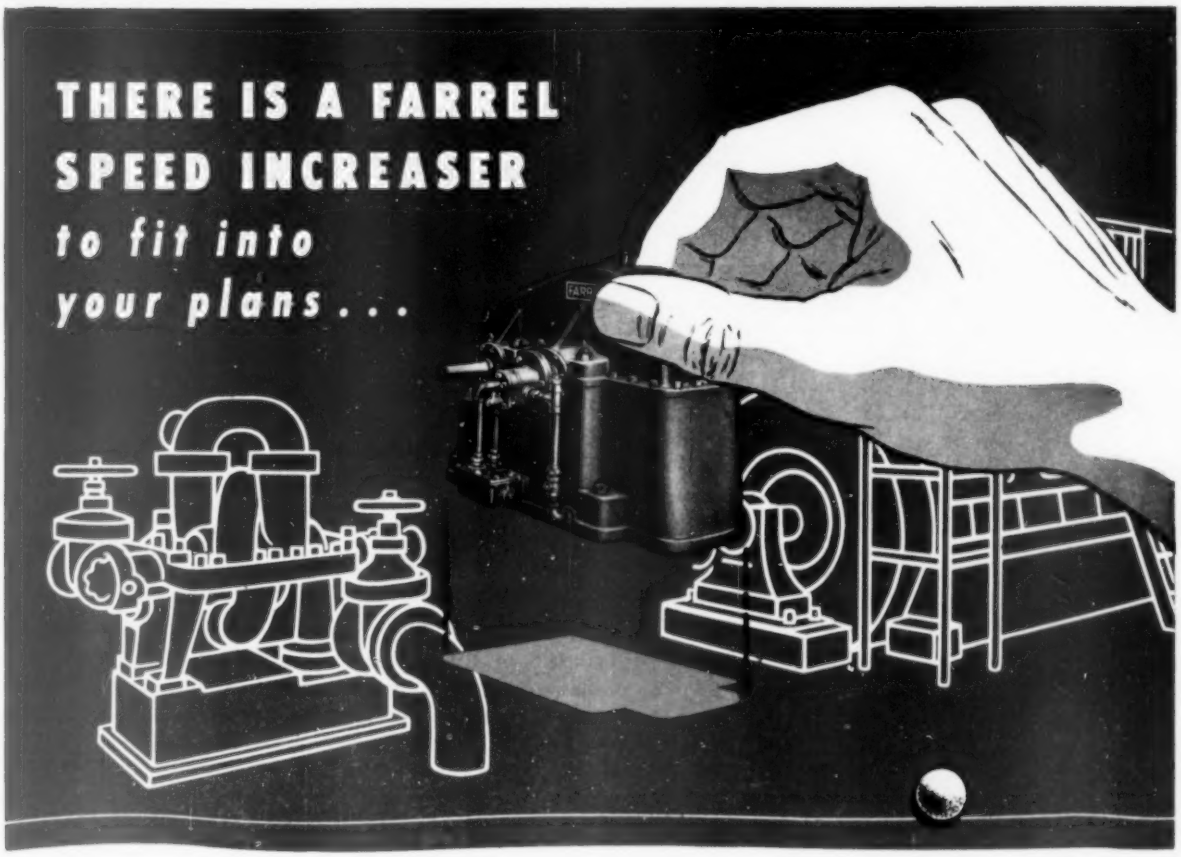

Farrel Type SI units were the first speed increasers to be developed in a standard series for pipeline pumping service. That was twenty-one years ago, and all of the original units, as well as those installed since, are still in operation.

The modern SI line consists of 49 standard sizes with speed ratios ranging from 1:1 to 12:1. For higher ratios, units using two sets of gears are supplied with ratio range from 12:1 to 40:1. Two-pinion units, designed to transmit power from a single engine to two pumps are also available.

When requirements fall between the range of Type SI units and standard commercial speed reducers, Farrel semi-high speed units are recommended.

Farrel engineers will be glad to help you select the right gear unit for your high-speed application. Write for further information about any of the types mentioned.

•

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Plants: Ansonia and Derby, Conn., Buffalo, N. Y.

Sales Offices: Ansonia, Buffalo, New York, Boston, Pittsburgh, Akron, Detroit, Chicago, Memphis, Minneapolis, Portland (Oregon), Los Angeles, Salt Lake City, New Orleans

OIL FIELD REPRESENTATIVES:

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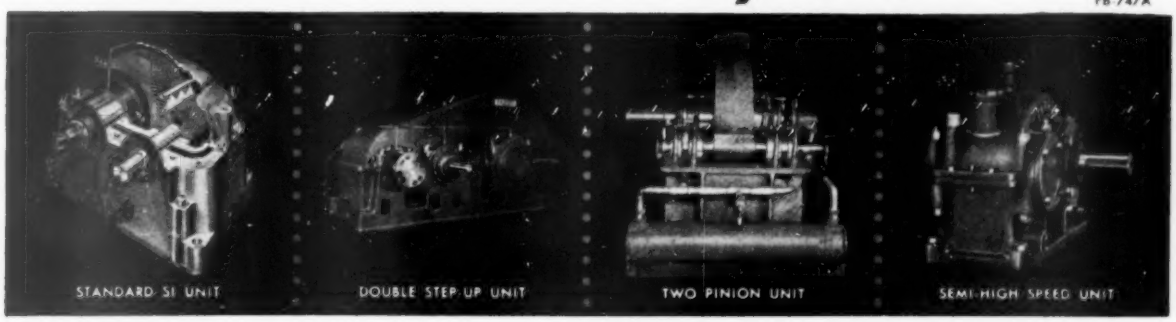
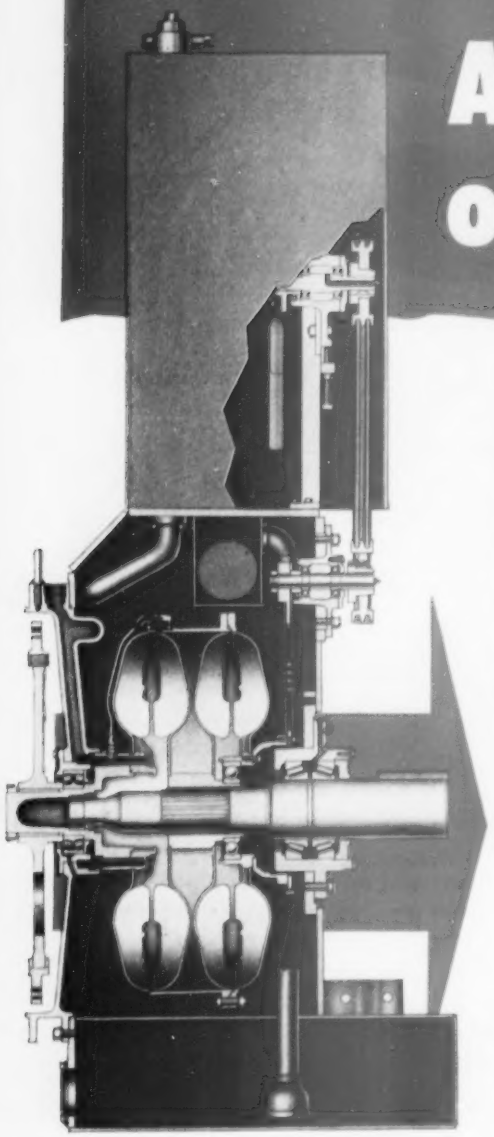
FB-747A



Again TWIN DISC of both FRICTION



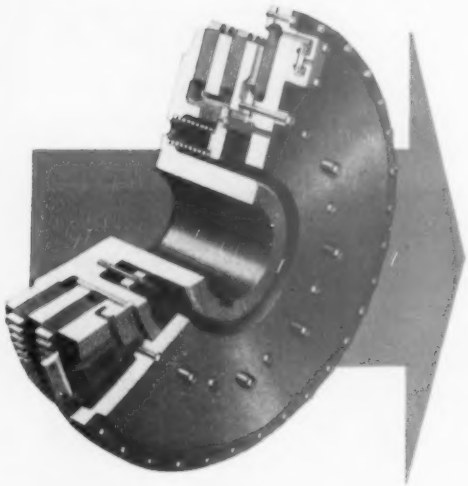
The Twin Disc Drives shown on these pages—all new, all proved—are the result of constant and intensive research, in cooperation with machinery manufacturers. Such a continuing development program is one of the reasons why Twin Disc remains the acknowledged leader in the design and production of Industrial Friction and Hydraulic Drives.

Equipment users are assured continuing peak performance from all Twin Disc products, by a $3¼ million inventory of parts and complete replacement units—strategically distributed in the field through a national system of 60 Parts Stations and 8 Factory Branches, manned by factory-trained service personnel.

Model HUD Disconnecting Hydraulic Power Take-Off

reduces impact shocks 70%

The newly designed, more compact Twin Disc Disconnecting Hydraulic Power Take-Off, proved in hundreds of industrial applications, provides more complete, effective use of peak engine torque . . . and a "cushion" on starting shocks, stopping shocks and overloads. Through Complete Disconnect feature, the HUD acts as a master clutch. Impact shock — on power units and driven equipment — is reduced 70% or more. The new HUD assures greatly lowered maintenance costs, and longer, more serviceable, trouble-free machinery life. Available in Coupling sizes 21 and 27″; to handle up to 600 hp engines. For details, write to Hydraulic Division, Rockford.



Air-Actuated Clutch

higher torque capacity — longer wear life

Designed for new compactness to meet installation limitations, the new Twin Disc Model PO Air-Actuated Clutch, first of a series, is available now in 2 and 3 plate 24″ sizes. Provides even greater torque capacity, though designed for minimum weight, width and inertia mass. For details, write factory at Racine, Wis.

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(MODEL T-302)

Extends Full-Range Performance of your Torque Converters

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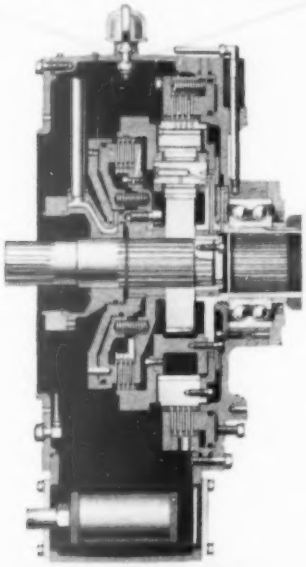

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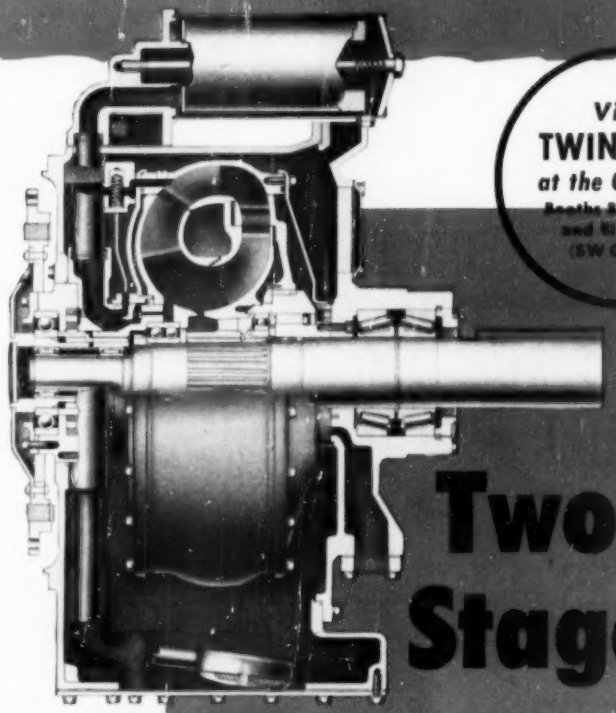

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offering new converter performance characteristics to fill the gap in industrial hydraulic drives

- **Up to 4:1 Torque Multiplication at Stall**—Delivers greater performance from present engines. *Eliminates* engine-lugging and torsional variations; *reduces* gear-shifting and clutching, *decreases* operator fatigue.

- **Operating Economy With Minimum Cooling Requirements**—accomplished through exclusive free-wheeling guide stage, allowing the engine to be completely unloaded under high speed, no-load conditions.

- **Progressive Increase of Engine Speed, and Uniform Pull-Down Under Load**—engine rpm during acceleration progresses *evenly;* decrease of engine rpm during load increase is *uniform.*

For specific information on new Twin Disc Two-Stage Torque Converters, write to Hydraulic Division, Rockford, Illinois.

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Hydraulic Division, Rockford, Illinois

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PRESSURES UP TO 875 LBS.-750° F.

No streamline housings.
No needless cover-ups.
Nothing fancy or frilly about these power-making huskies. Dean Hill Steam Turbines are designed and built for nothing but long service and easy, economical operation. Their heavy, rugged construction is simple and uncluttered for quick, easy maintenance. All pressure parts are outside and visible to operator.

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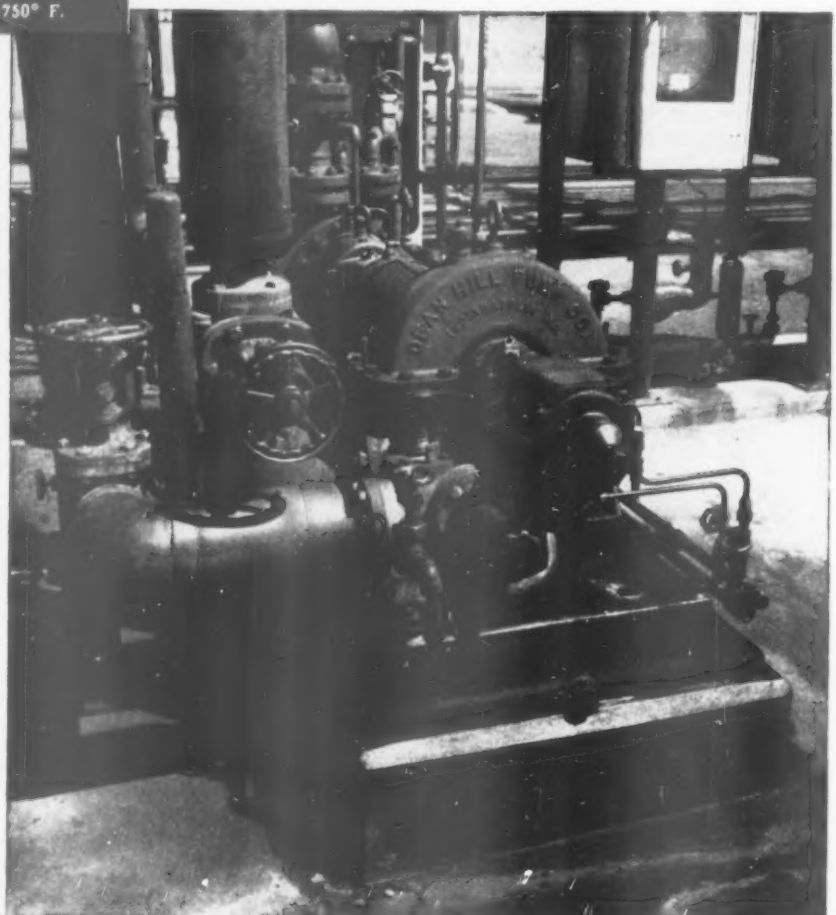
.....are single stage, double impact type for low steam consumption. Specifically designed for operation at medium steam pressures and temperatures, DH Turbines have all the advantages available under these conditions, including excellent water rates. Write us for further information and complete specifications.



One of eighty-four Dean Hill Steam Turbines recently installed in a large, eastern Refinery

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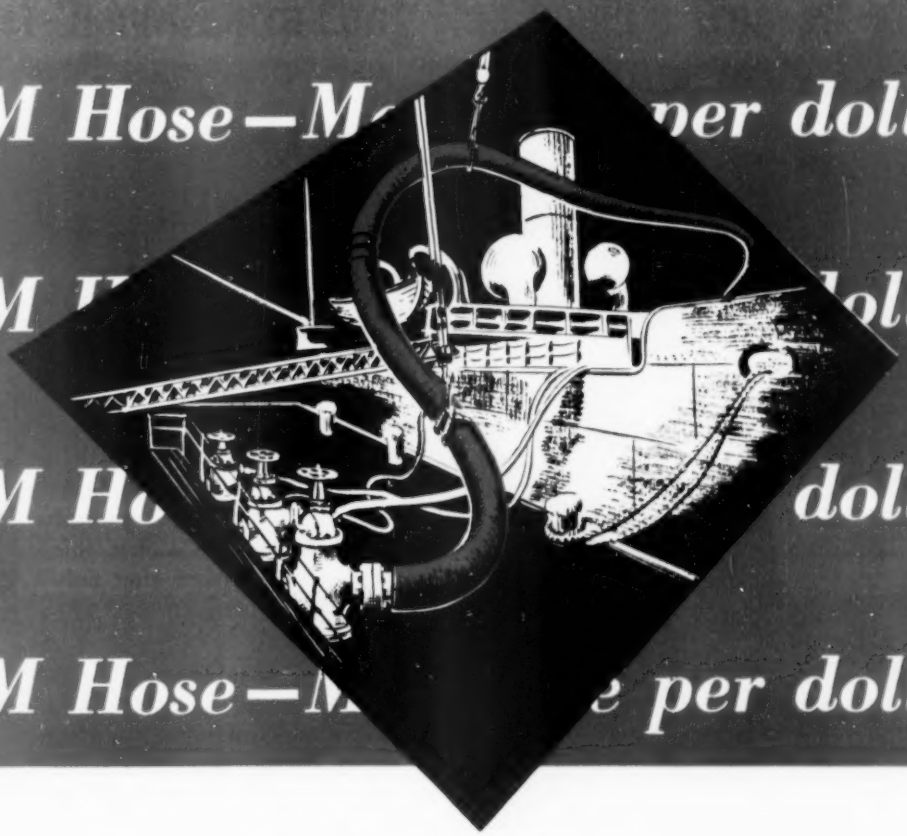

SPECIAL HOSE FOR SPECIFIC USES . . . and you save money in the long run. R/M makes hose for hundreds of uses . . . many of them requiring special hose design and manufacturing experience. For example, Oil Loading Hose for rapid pumping of petroleum between ship and shore . . . flexible, strong, safe and leakproof. Other R/M hose for suction, steam, chemicals . . . and giant hose for dredging . . . hose that's flexible and light, yet rugged and strong for air, water, paint spray . . . all designed to do their specific job and give you MORE USE PER DOLLAR. Ask the R/M distributor about any special or standard hose application . . . Also how you can save money, too, on R/M transmission, and conveyor belts, and V-belts.

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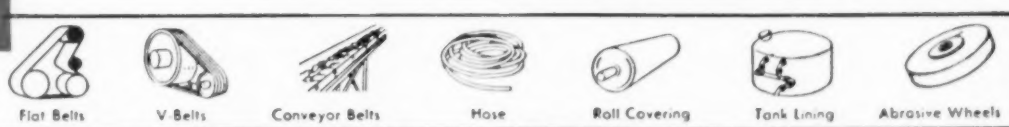
RAYBESTOS-MANHATTAN, INC.



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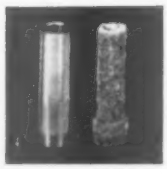
Another Carpenter First

TAMING SULPHURIC ACID with a Super Stainless Steel



● The battery filling nozzle shown at the right was made of good 18/8 stainless steel . . . but this is the way it looked after only a two week beating from 12% sulphuric acid!

The battery manufacturer had a real headache on his hands. Hard rubber nozzles used previously resisted the acid but broke easily, sometimes as high as 10 per day. And when a nozzle broke, it tied up the production line 30 minutes or more.

Then he solved his problem by changing to nozzles made from Carpenter No. 20—the super stainless steel that handles sulphuric acid and a host of other strong corrodents. The left photo shows a Stainless No. 20 nozzle after five months' use. There is no sign of corrosion.

If you have a product or a process where corrosion is a problem, put Carpenter experience to work for you. Distributors are located in major cities from coast to coast. The Carpenter Steel Company, Alloy Tube Division, Union, N. J.

Export Dept.: The Carpenter Steel Co., Port Washington, N.Y., "CARSTEELCO"

New 16-Page Book of Technical Data

For complete information on No. 20 and the jobs it can do, write us a note on your company letterhead and ask for the new Carpenter Stainless No. 20 book.

Carpenter

STAINLESS TUBING & PIPE

Analysis · Tolerance · Finish

· guaranteed on every shipment

Cut wire fence re-coating costs!

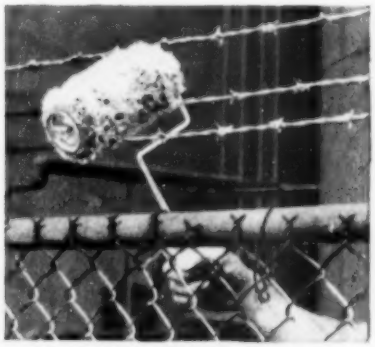
Users Report Savings of 30% to 40% With Rust-Oleum Extra-Long Nap Lamb's Wool Roller!

Special roller glides easily over wire sections. (Rusted sections have already been primed with Rust-Oleum 769 Damp-Proof Red Primer to Stop Rust.) Finish coat is Rust-Oleum 470 R.M. Aluminum.

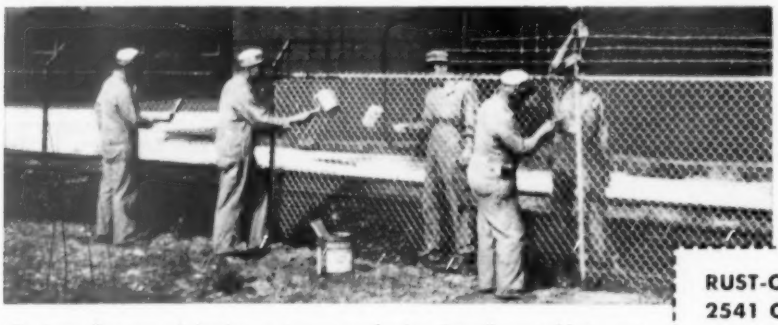
A *new, exclusive, different-type* roller! Greater diameter, specially selected skins, extra-long Lamb's Wool – all combine to give you more coverage faster and easier in the new Rust-Oleum Roller-Coating System.

Close-up shows how Extra-Long Nap Wool reaches around to coat approximately 70% of other side of fence at same time. Rust-Oleum's *exclusive* penetrating qualities saturate cross wire sections for desired mil thickness.

Man follows with "dry" roller on opposite side of fence to catch and use surplus "tears" and quickly coat remaining 30% of wire sections.



Even barbed wire sections can be roller-coated in one easy pass. 99% of the material is used on the fence – *not* on the workers, *not* on the ground.



On long distances of fencing, a 5 man production "team" can achieve even greater savings. The first man wirebrushes the surface to remove dirt, dust, rust scale, etc. The second man applies Rust-Oleum liberally by roller, coating the wire sections and barbed wire. The third man follows on the opposite side of the fence with a "dry" roller to catch and use the surplus. The fourth and fifth men work on opposite sides of the fence, brushing the pipe framework and the barbed wire arms. See how this new Rust-Oleum system can save you money. Attach coupon to your letterhead, mail *today*.

RUST-OLEUM

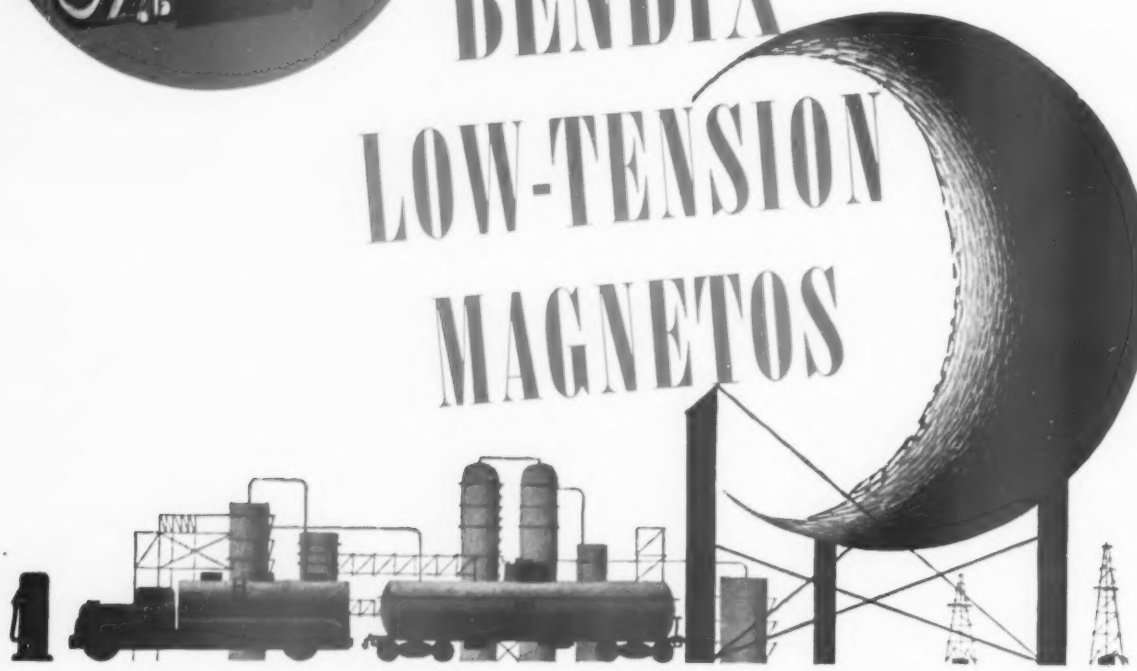
STOPS RUST!

RUST-OLEUM CORPORATION
2541 Oakton Street, Evanston, Illinois

SEE IT DEMONSTRATED!
BOOTH # 129
INTERNATIONAL PETROLEUM EXPOSITION

Designed for the Petroleum Industry—

BENDIX LOW-TENSION MAGNETOS



It's the magneto designed to eliminate fire hazard, foremost problem of the petroleum industry. The special ventilating arrangement of the Bendix Low-Tension Magneto permits air laden with explosive fumes to enter the magneto for ventilation without danger of igniting the surrounding air. Kits are also available to convert magnetos now in use to the "flame-proof" ventilation type.

In addition to this important safety feature, Bendix Low-Tension Magnetos actually reduce engine maintenance and operating costs. For example, spark plug erosion is reduced to a minimum. The distribution of low-tension voltage to the high-tension coils is through a series of breaker assemblies, thus eliminating trouble often experienced with the conventional distributor. Variable or fixed sparks can be obtained by internal adjustment.

For safety and low operating costs it will pay you to specify Bendix Low-Tension for all your magneto requirements. Complete data available on request.

- Low Plug Erosion Rate
- Breaker Type Distributor
- Ventilation without Fire Hazard
- Radio Shielding Available
- Variable or Fixed Ignition

Bendix

SCINTILLA MAGNETO DIVISION OF
SIDNEY, NEW YORK

Bendix AVIATION CORPORATION

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, New York

FACTORY BRANCH OFFICES:
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Brouwer Building, 176 W. Wisconsin Avenue, Milwaukee, Wisconsin • 582 Market Street, San Francisco 4, California

Include Tenamene 2 in your blueprint to save refining time, materials and equipment

Effective sweetening and gum inhibiting in one operation!

After sweetening a sour gasoline, Tenamene 2 remains in the sweetened gasoline to provide powerful, efficient protection against gum formation.

No matter what sweetening or inhibiting processes you are now using, the chances are that the use of Tenamene 2 can result in significant savings. For example, using Tenamene 2 may considerably reduce heat costs by cutting recycling time, or it might eliminate costly regeneration of copper or plumbite treating solutions.

If you're interested in general information about gum inhibiting as well as specific data about the Tenamenes, send for the booklets listed in the coupon. Our Petroleum Chemicals Laboratory will be glad to make tests and recommendations on any of your gum inhibiting problems.

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tenn.; New York—260 Madison Ave.; Framingham, Mass.—65 Concord St.; Cleveland—Terminal Tower Bldg.; Chicago—360 N. Michigan Ave.; St. Louis—Continental Bldg.; Houston—412 Main St. **West Coast: Wilson Meyer Co.,** San Francisco—333 Montgomery St.; Los Angeles—4800 District Blvd.; Portland—520 S. W. Sixth Ave.; Seattle—821 Second Ave.

Tenamene EASTMAN GASOLINE ADDITIVES

Eastman
CHEMICAL PRODUCTS, INC.
KINGSPORT, TENNESSEE

Eastman Chemical Products, Inc.,
Chemicals Division, Kingsport, Tennessee

Gentlemen: Send me copies of your booklets: "Inhibiting Motor Fuels with the Tenamenes" and "Tenamene 2 Inhibitor Sweetening."

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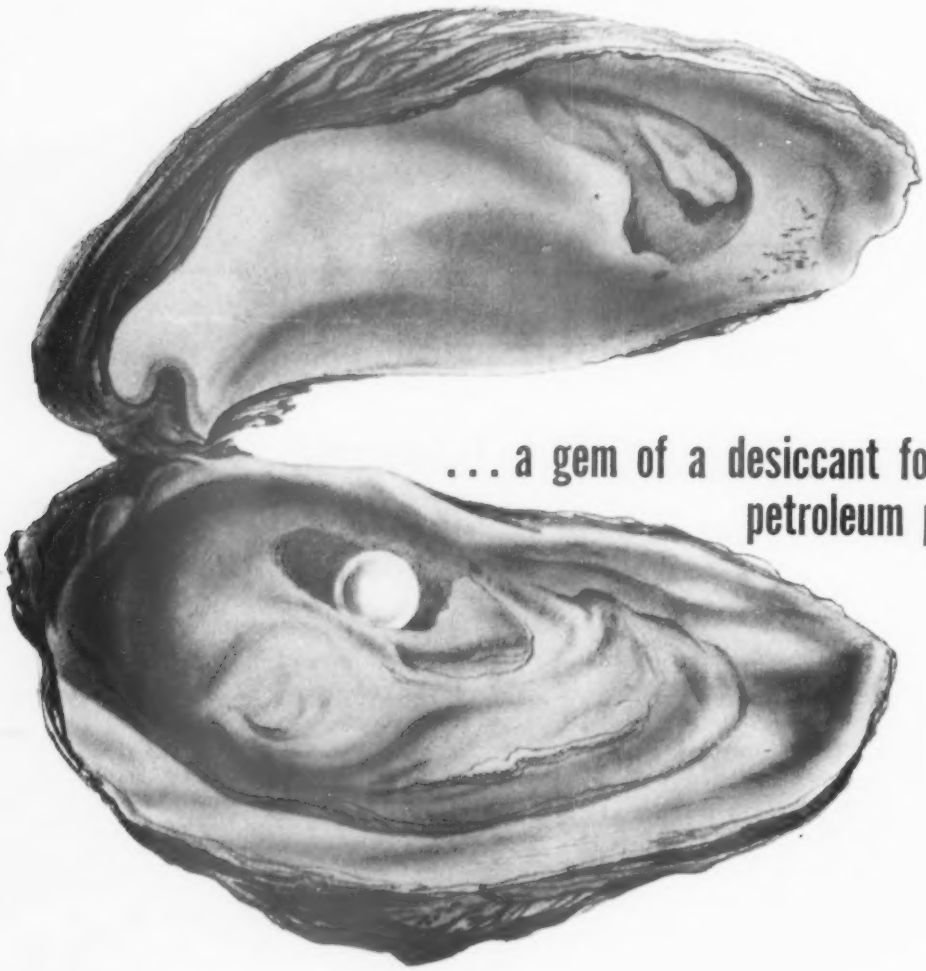
Sales representative for **TENNESSEE EASTMAN COMPANY,** division of **EASTMAN KODAK COMPANY**

Alcoa's new Activated Alumina



. . . a gem of a desiccant for petroleum processing

Here, at last, is the ideal desiccant—ALCOA's latest and most efficient *Activated** Alumina, H-151 in ball form.

ALCOA Activated Alumina is the "old reliable" among drying agents, widely used in petroleum processing to dry liquids and gases to *lower* dew points than any other commercial adsorbent. Now the new H-151 series provides *longer* life . . . *higher* capacity . . . *lower* pressure drop . . . *greater* physical stability than ever before offered to the petroleum industry.

ALCOA Activated Alumina is commercially pure, highly inert, and possesses remarkably high resistance to crushing, abrasion, and thermal and mechanical shock. It will not change its form or properties—even when immersed in water—and can be reactivated almost indefinitely.

Call your nearest ALCOA sales office or write for complete data on this new, amorphous gel type Activated Alumina. Investigate its application to *your* processing problems today.

Write to ALUMINUM COMPANY OF AMERICA, CHEMICALS DIVISION, 718-E Alcoa Building, Pittsburgh 19, Pa.

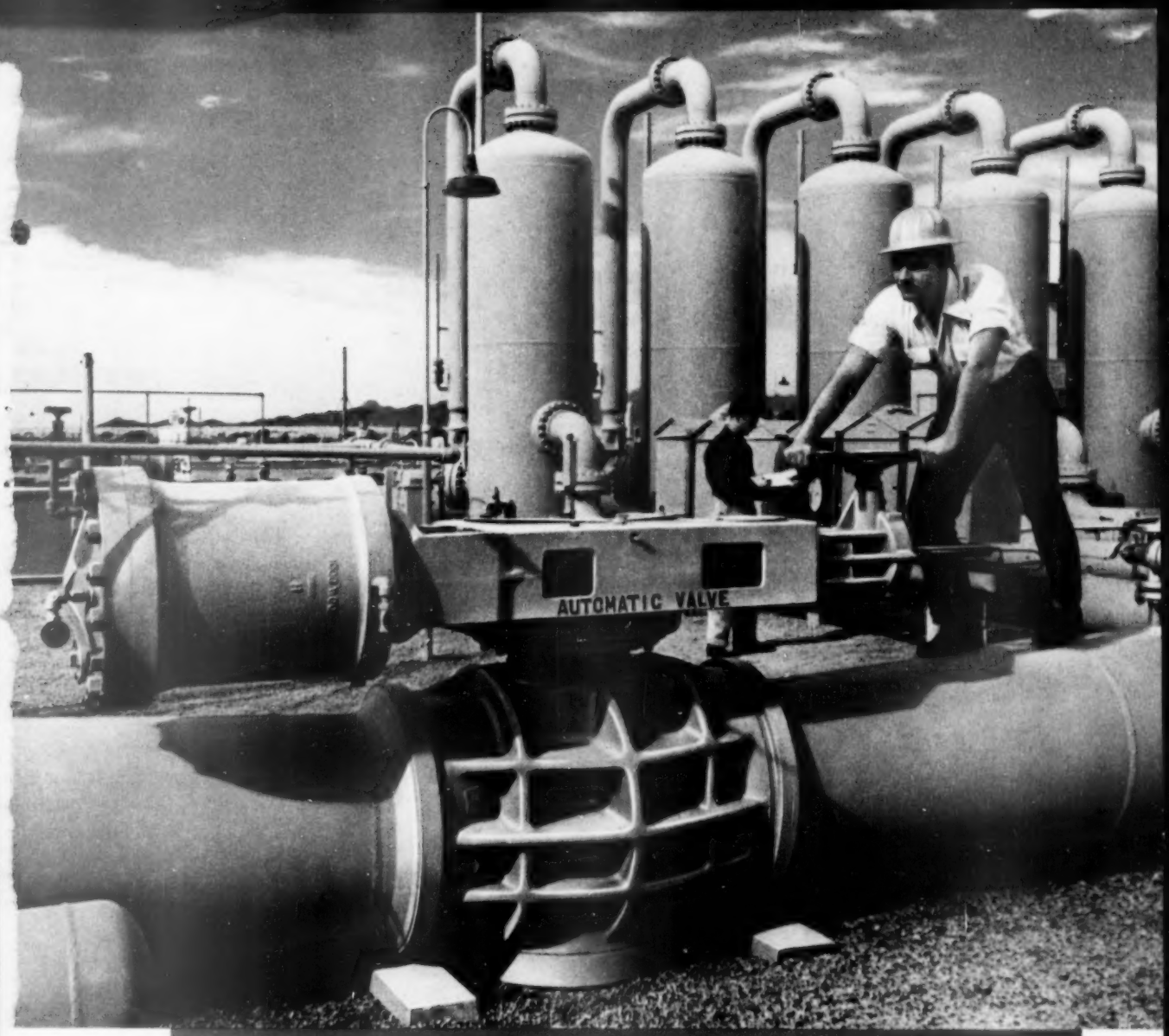
*Registered Trade-Mark, Aluminum Co. of America

Alcoa Chemicals

ALUMINUM COMPANY OF AMERICA

"SEE IT NOW" with Edward R. Murrow . . . CBS-TV every Sunday . . . brings the world to your armchair. Consult your newspaper for local time and channel.

Don't forget ALCOA Utilitube*—aluminum instrument air tubing in long lengths.



Lubricated INSURANCE POLICY

Ever hear of a lubricated insurance policy?

That's really what you're buying when you install power operated Nordstrom valves. You're buying *Prevention* and *Control*.

Prevention, because in a Nordstrom protective lubricant seals tighter than any other method, yet makes a sliding contact surface for instant easy operation on a quarter turn.

Control, because Nordstrom valves can be equipped for electric, hydraulic or pneumatic operation, with automatic, manual or remote control.
Rockwell Manufacturing Company, Pittsburgh 8, Pa.

ROCKWELL Built Nordstrom Valves

Lubricant-Sealed for Positive Shut-Off

Another ROCKWELL Product

Lubricant makes a valve easier to operate, just as it will nearly any mechanical device. But that's far from its only function in a

NORDSTROM....

A system of internal grooves deposits a seal of lubricant, under pressure, around each port to prevent both internal and external leakage.

A NEW VALVE

properly maintained, stays new for many years—always tight, always ready to operate in an emergency, because the lubricant in a Nordstrom valve keeps erosion-producing seepage from starting in the first place, filling the smallest scratch on the seating area with a film of plastic sealer.

EVERY TIME IT'S LUBRICATED

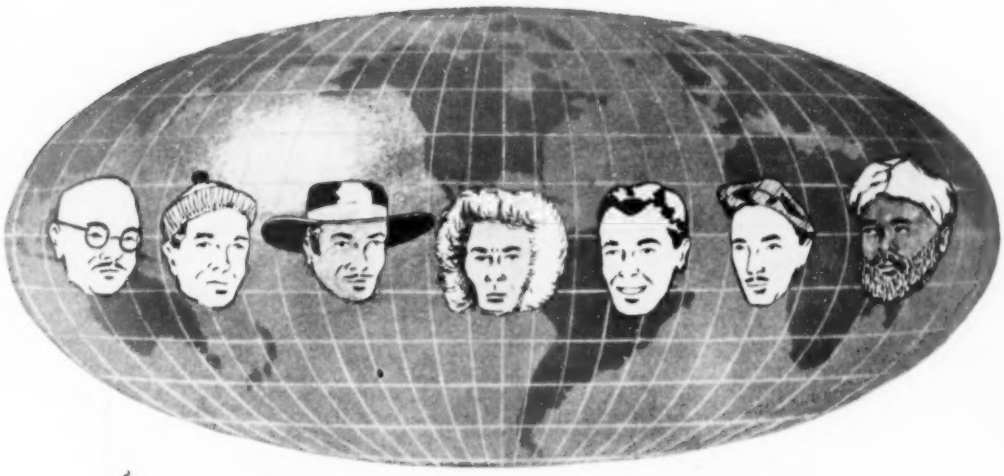
a Nordstrom valve is renewed—a new self-sealing seat around the valve ports. So, because they stay tight so much longer, Nordstrom valves, with systematic maintenance, actually lower operating costs.

Rockwell Manufacturing Company,
Pittsburgh 8, Pa.

Nordstrom Valves Another Quality **ROCKWELL** Product

ENSIGN CARBURETORS

ACCEPTED THE WORLD OVER



IN ANY LANGUAGE, ENSIGN means EASY STARTING and ECONOMICAL OPERATION on GAS, GASOLINE or LP-GAS

Wherever oil is produced you'll find ENSIGN Carburetors on gas engines used for well drilling, servicing and pumping.

A gas engine to be considered successful must have "acceptance". Every component, too, must likewise be acceptable—acceptable from the standpoint of performance and ease of service and repair. An acceptance upon which repeat business is built comes from a satisfaction and familiarity with the product through years of daily use. Our original service policy which calls for interchangeability and availability of replacement parts for carburetors 20 to 25 years old has helped immeasurability in building ENSIGN acceptance. Operators everywhere are more familiar with an engine when it is equipped with ENSIGN!

"ENSIGN, pioneers in efficient carburetion for over 42 years."

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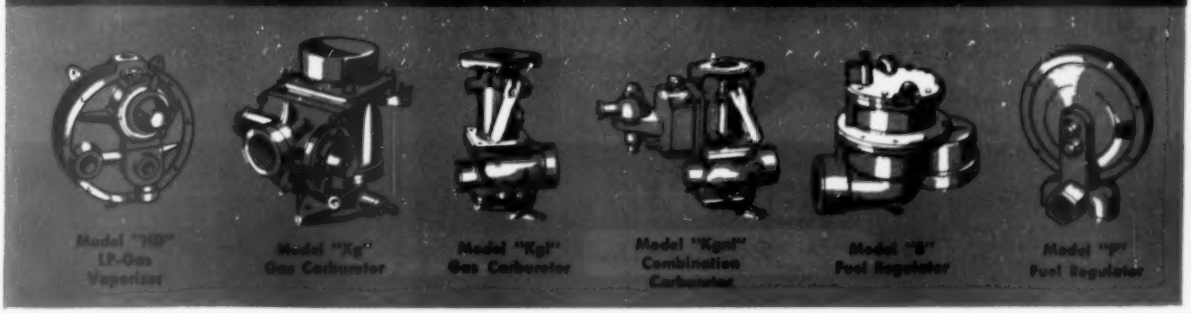
NATURAL GAS, GASOLINE AND LP-GAS CARBURETORS 5 TO 500 HORSEPOWER


Model "HD" LP-Gas Vaporizer
Model "Xg" Gas Carburetor
Model "Kgl" Gas Carburetor
Model "Kgnl" Combination Carburetor
Model "B" Fuel Regulator
Model "P" Fuel Regulator

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For a Good Cement Job

B and W originated and pioneered the LATCH-ON-CENTRALIZER for easy installation . . . the KON-KAVE Bow for greater centering strength . . . the WALL CLEANING GUIDE . . . the MULTI-FLEX and HINGED NU-COIL SCRATCHERS FOR POSITIVE MUD REMOVAL and COMPLETE CEMENT FILL.

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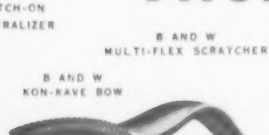
B AND W LATCH-ON CENTRALIZER

B AND W KON-KAVE BOW



B AND W MULTI-FLEX SCRATCHER

B AND W WALL CLEANING GUIDE

B AND W NU-COIL SCRATCHER

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Check these points on Enterprise Diesel Service

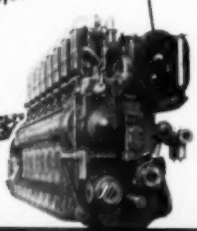
12 service offices, strategically located parts warehouses—for fast round-the-world service.

Prompt processing and factory delivery on parts not normally stocked in local warehouses.

Quick handling of all routine or emergency overhaul work.

Expert supervision of any engine service constantly available by experienced ENTERPRISE Service Engineers.

ADD IT ALL UP and it pays to buy ENTERPRISE—backed by ENTERPRISE Specialized Service.



Take the case of this "hurry-up" call from Venezuela, for example—

On January 9th at 10:30 A. M. this cable was handed to M. T. Prendergast, ENTERPRISE Manager of Service Parts in San Francisco:

"URGENT AIR EXPRESS TWO FUEL TAPPET AND GUIDE ASSEMBLIES NO. 78153"

It came from T. P. Jiminez, Manager, Fuerza Luz Tuy—power company in Ocumare Del Tuy, Venezuela. Prompt handling saw this rush order airborne by early afternoon, and *delivered to the customer 44 hours and 15 minutes later!*

This is typical of the service you can expect from ENTERPRISE. We know what delivery delays can mean—how costly it can be when engines are idle for need of a part. That's why ENTERPRISE Parts Service is geared to the *customer's* requirements, and why we insist that furnishing prompt and efficient service is every bit as important as building the very finest Diesel engine.

Write for new descriptive bulletins, or call your nearest Enterprise Diesel Sales Office.

See Our Exhibit!
OIL SHOW
TULSA MAY 14-23

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DIESEL ENGINES • OIL BURNERS • PROCESS MACHINERY

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DEPENDABLE
Diesels

THESE THREE TEEN-AGERS are officers of a company that earns a profit and has declared a dividend. They are studying samples of their product—a type of watering can. In the center is Michael Karagianis, 18, president of the Doo-Zee Novelty Company, Chicago. With him are Susan McKee, 16, secretary (sitting), and Barbara Jebavy, 16, treasurer. This Junior Achievement project is one of twenty-nine sponsored by the Standard Oil Company.

HE'S A COMPANY PRESIDENT AT 18

Michael Karagianis is 18 and a college freshman. He is also the president of a successful company—the Doo-Zee Novelty Company, which manufactures watering cans.

This is not too unusual. Thousands of American boys and girls between the ages of 15 and 21 run businesses that make everything from salad dressing to desk calendars.

They have rent to pay, books to keep, supplies to buy, payrolls to meet and merchandise to sell. They must find investors for their company stock and endeavor to pay dividends to their stockholder-owners—who share the risk with them.

These boys and girls are members of Junior Achievement, a national organization. Its members learn the problems and responsibilities of business and why a profit is necessary to stay in business. They receive character-building training in leadership, initiative and teamwork.

Each of these miniature companies is sponsored by an established and successful firm.

Standard Oil, for example, sponsors twenty-nine Junior Achievement projects throughout the Middlewest. Scores of our ablest employees contribute their experience and time to help train these teen-age businessmen.

Although Standard Oil is a big company, it is not too big nor too busy to be interested in 18-year-old Michael and other teen-agers.

In fact, we think it's a privilege to pass on the lessons of our experience to these boys and girls.

Standard Oil Company
(INDIANA)

ONE OF THE FIRST principles of success in business is to keep track of your money—both incoming and outgoing. Pat Santucci, of our Sales Accounting Department, shows Barbara and Susan an efficient way to keep books. Though Standard Oil financial reports show figures in the hundreds of millions of dollars, Mr. Santucci emphasizes the importance of accurate accounting for even the smallest company.

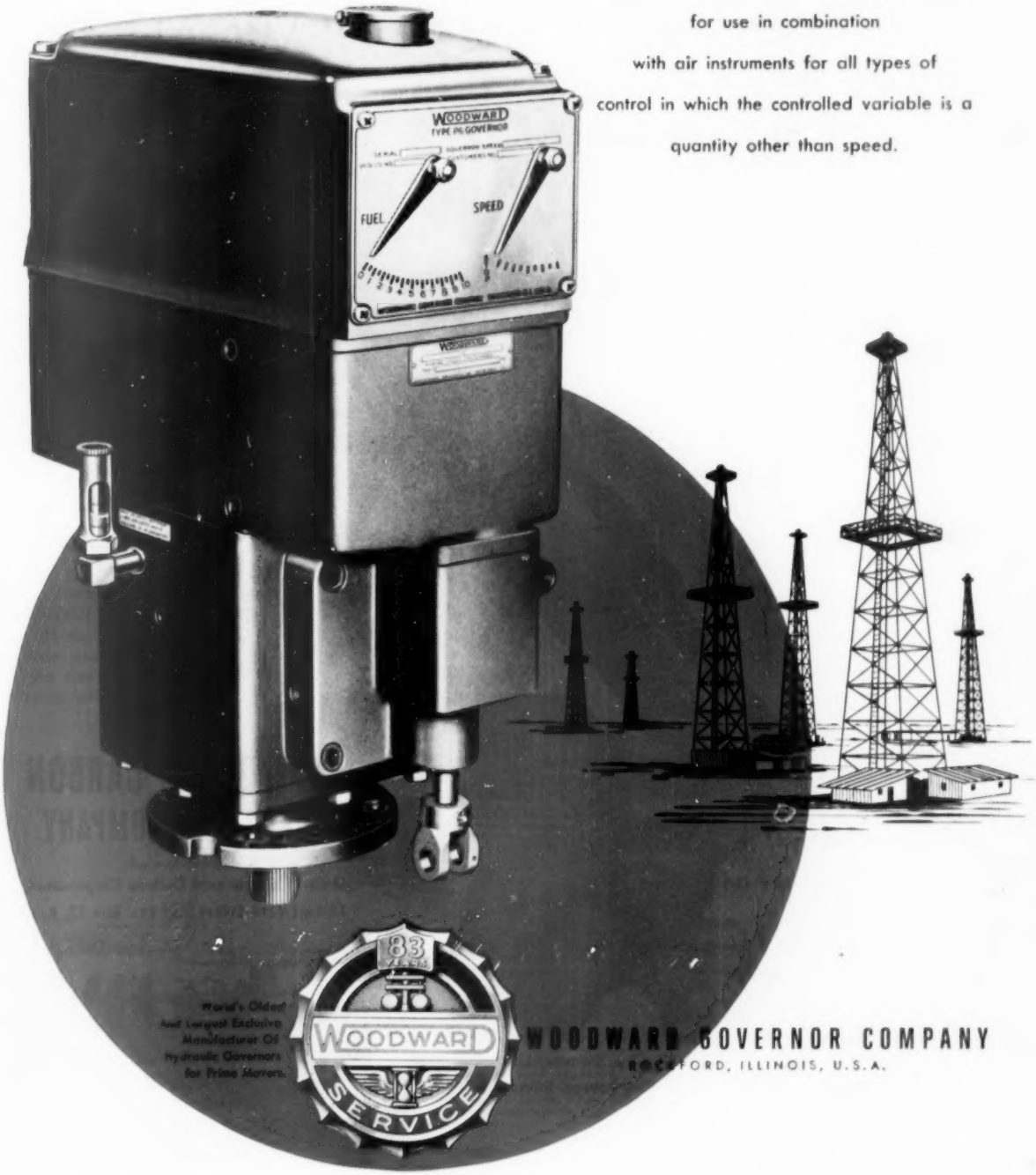
SHOWING A MEMBER of the Doo-Zee Novelty Company how to handle a knotty production problem is Standard Oiler Dean E. Hastings. Though small in comparison, Doo-Zee's production problems are as vital to that company's success as are those of Standard Oil. Last year more than 2,000 petroleum products were produced and distributed by Standard Oil and its subsidiary companies, employing over 51,000 people.

IF A COMPANY can't sell the merchandise it produces, it won't live long in our competitive system. That's as it should be, with the consumer having the final word. Here Kenneth Apel, standing, and Roland Schmitt, beside him, both of Standard Oil's sales department, give Doo-Zee salesmen some sound advice: *Good* products at reasonable prices will be successful. Last year Standard Oil's sales totaled $1,550,000,000.

Precision Control.....

FOR THE PETROLEUM INDUSTRY

Illustrated is a
Woodward type PG Governor
with pneumatic-hydraulic speed adjustment
for use in combination
with air instruments for all types of
control in which the controlled variable is a
quantity other than speed.



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Monoethanolamine, Diethanolamine } *For H_2S and CO_2 removal*

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RAPID DELIVERY IN:

- tank cars
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- drums in carload lots
- drums in truckload lots

Drum lots shipped from Dallas, Houston, Tulsa, New Orleans, Kansas City, Chicago, Salt Lake City, Denver, Los Angeles, San Francisco, and 40 other warehouses throughout the country.

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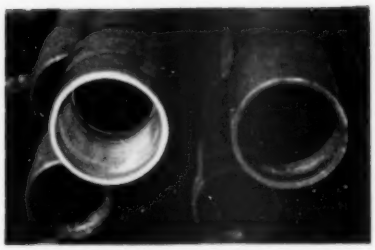
NEW AIRETOOL JOINT CLEANER replaces slow, costly hand cleaning of threaded pipe joints and ends. Removes all deposits, restores pipe to its original usefulness.

NEW AIRETOOL JOINT CLEANER quickly cleans threads in pipes 2" to 10". No equipment changeover necessary to clean inside or outside. Fully automatic, push button control.



NEW AIRETOOL JOINT CLEANER is fast and efficient. Saves time, saves cost. Permits you to reclaim more old pipe and to recondition threaded joints and ends.

NOW!

CLEAN INSIDE OR OUTSIDE PIPE ENDS IN LESS THAN 8 SECONDS WITH THE NEW AIRETOOL JOINT CLEANER!*

Here's the first fully automatic joint cleaner! It thoroughly cleans pipe ends, inside or out, without any changeover of equipment. It is powered by a single stage, air-driven motor of slip-fit construction and operates the brush at 4000 rpm. Its heavy duty wire brush head quickly removes even the hardest deposits. A solvent or cleaning fluid may be manually released during cleaning to dissolve and flush away the deposit being removed. Easy to handle—weighs 16 pounds.

If you reclaim well pipe or pipe lines, you need this new AIRETOOL JOINT CLEANER. It will do the job faster, better and at less cost. Write for catalog and illustrated literature.

*Patent Pending

AIRETOOL
MANUFACTURING COMPANY
SPRINGFIELD, OHIO

Manufactured by The Airetool Mfg. Co., who also produce tube expanders and tube cleaners for every type of tubular construction, an automatic Tube Expansion Control System, and a line of oil refinery specialities.

BRANCH OFFICES: New York • Chicago • Philadelphia • Tulsa • Houston • Baton Rouge • Hudson Heights (NJ)
REPRESENTATIVES in principal cities in U.S.A., Canada, Mexico, South America.

Cleveland CU units shown here are at work in a gasoline plant in West Texas.

WORM GEARING—universal in its application—affords advantages for almost every power transmission job. Whether you want worm gearing sets or speed reducer units, you will find drives to meet your need in the complete Cleveland line.

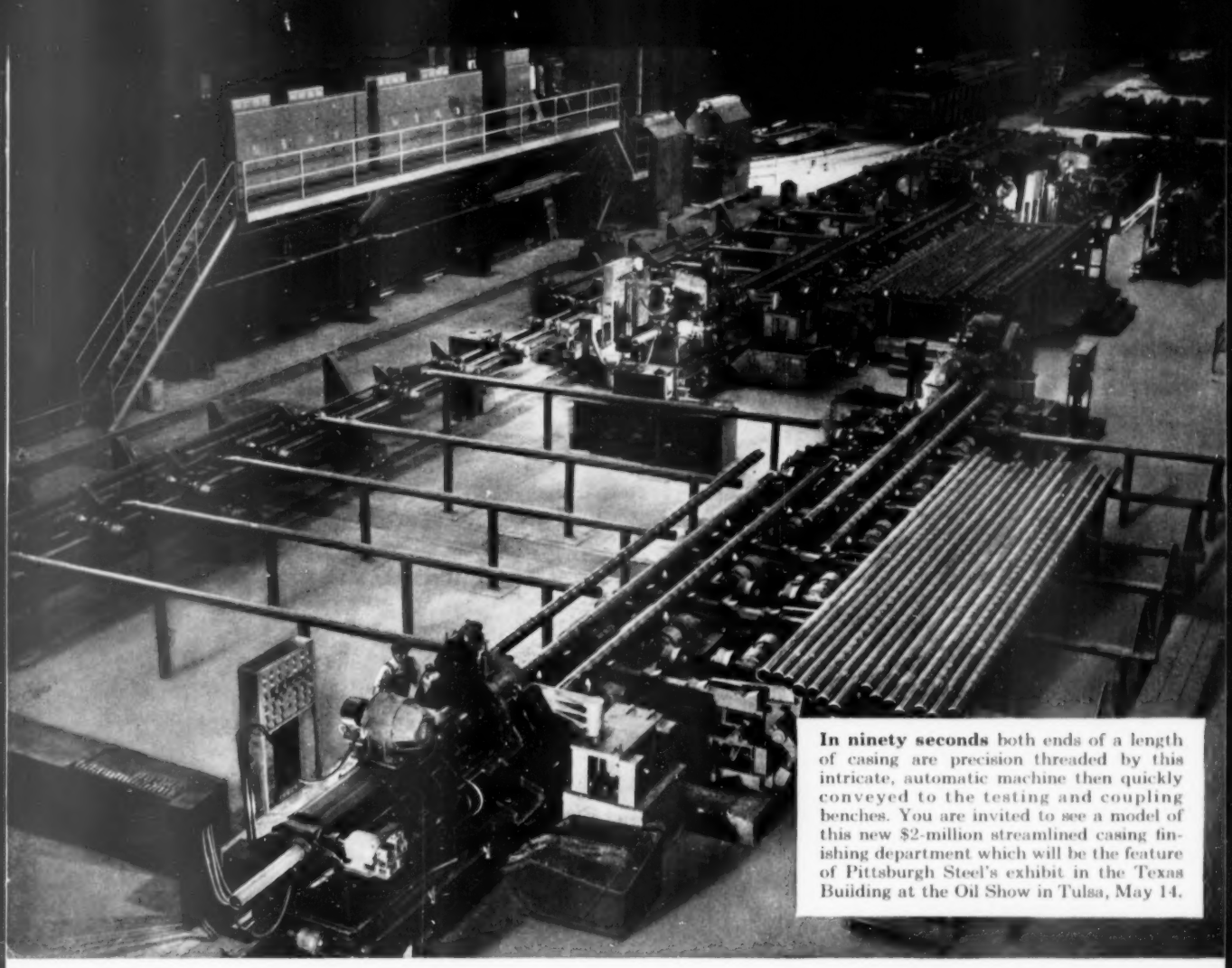
Specify sturdy CLEVELAND CUs to drive high speed fans

REFINERY men like the exceptionally sturdy construction of the Cleveland CU worm gear drive. That's why you see so many of these units on heat exchangers, driving large high speed fans. Its heavy-ribbed housing, large diameter fan shaft and long-wearing worm and gear enable it to operate year after year under most severe conditions. It is simple to install, easy to service in the field. Every Cleveland CU speed reducer is run in and pretested under load before it leaves the factory.

With greater emphasis on efficiency and low-cost operations, more and more companies find in this sturdy Cleveland CU unit the ideal heat exchanger drive—delivering trouble-free, economical service, operating at high speeds and under heavy loads year after year, throughout its long lifetime.

For complete description and engineering data, write for free Catalog 400. The Cleveland Worm & Gear Company, 3286 East 80th St., Cleveland 4, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers Limited.



In ninety seconds both ends of a length of casing are precision threaded by this intricate, automatic machine then quickly conveyed to the testing and coupling benches. You are invited to see a model of this new $2-million streamlined casing finishing department which will be the feature of Pittsburgh Steel's exhibit in the Texas Building at the Oil Show in Tulsa, May 14.

Completely New

Since oil was first discovered, oil well casing has played an important part in its recovery. For half a century Pittsburgh Steel Company has served this vital industry by developing and producing improved types of seamless steel casing, drill pipe and tubing . . . making it possible to drill safer, easier, faster and with increased efficiency.

As a pioneer in precision threading, Pittsburgh Steel today carries on that tradition with the construction of a complete new department for the finishing of seamless casing. The most modern automatic threading equipment, hydrostatic test bench, coupling screw-on machines, inspection tables, scales and other auxiliary equipment has been installed in this new building to streamline the finishing operation. Production is speeded . . . quality held high by this $2-million project.

These new facilities are an important part of the Program of Progress which is transforming Pittsburgh Steel into a new steel company. In addition to improving facilities for making tubular and wire products, the program provides for increases in steel making capacity of 48% and in finished product capacity of 82%. This $62-million plan, rapidly nearing completion, includes the construction of continuous hot and cold rolled sheet mills to broaden the company's line of products and widen the scope of its service.

As a new steel company Pittsburgh Steel is strengthening its position in the industry—benefiting its customers by affording them a dependable source of material—its employees by providing steadier work—its stockholders by increasing the earning potential. Likewise, it helps the nation build high the bulwarks of a strong defense against economic and military aggression.

Program of Progress

Acquisition of Thomas Steel	100% Complete
Increase of Blast Furnace Capacity by 12%	75% Complete
Increase of Open Hearth Capacity by 48%	74% Complete
Installation of new 66-inch High Lift Blooming-Slabbing Mill	100% Complete
Installation of Continuous 66-inch Hot Rolled Sheet-Strip Mill	94% Complete
Installation of 66-inch Cold Rolled Sheet-Strip Mill	80% Complete

Pittsburgh Steel Company

Pittsburgh 30, Pennsylvania

VISIT IVERSON at the OIL SHOW

IVERSON GENERAL OFFICES
400 WEST FIFTH STREET — TULSA

VIEW OF EXPOSITION GROUNDS
88-89-90 KANSAS BUILDING IVERSON OIL SHOW DISPLAY

When you are in Tulsa for the Oil Show, we will appreciate seeing and visiting with you. As many of our field and store personnel, as can be spared, will also be here and they will want to see you again. Since our General Headquarters are in Tulsa, perhaps we can be of help in performing some service for you. Please feel free to call on us.

IVERSON SUPPLY CO. • OIL WELL SUPPLIES • I S C O.

See Us at
TULSA MAY 14-23

STORES: Artesia and Farmington, New Mexico; Oklahoma City, Okmulgee and Tulsa, Oklahoma; Kermit, Odessa and Snyder, Texas and Price, Utah.

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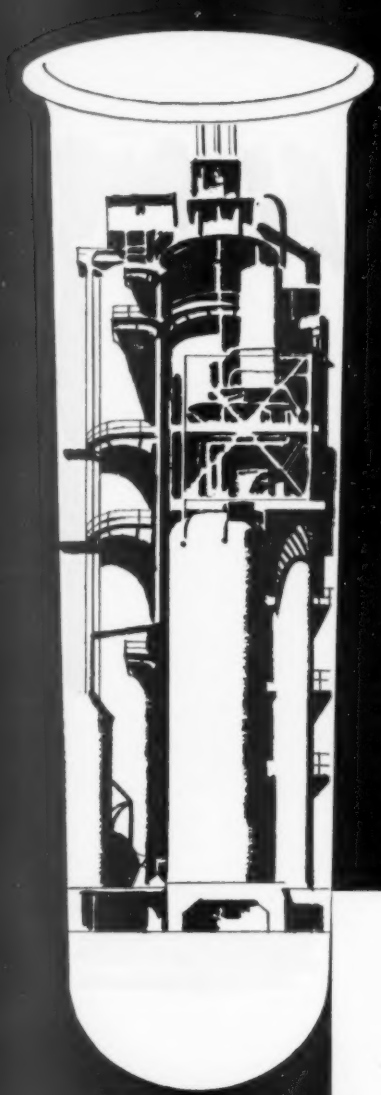
OFFICES: MIDLAND TEXAS



AEROCAT® MS Synthetic Fluid Cracking Catalysts

CYANAMID offers integrated service to meet your chemical requirements

...from well to finished product

Staffed by specialists, Cyanamid's integrated Petroleum Chemicals Department serves every phase of the petroleum industry.

The extent of this service is illustrated by the department's ability, based on continuing research and large manufacturing facilities, to meet the chemical requirements of the industry's many branches—from drilling mud conditioners to gelling agents, specialty catalysts to lube oil additives.

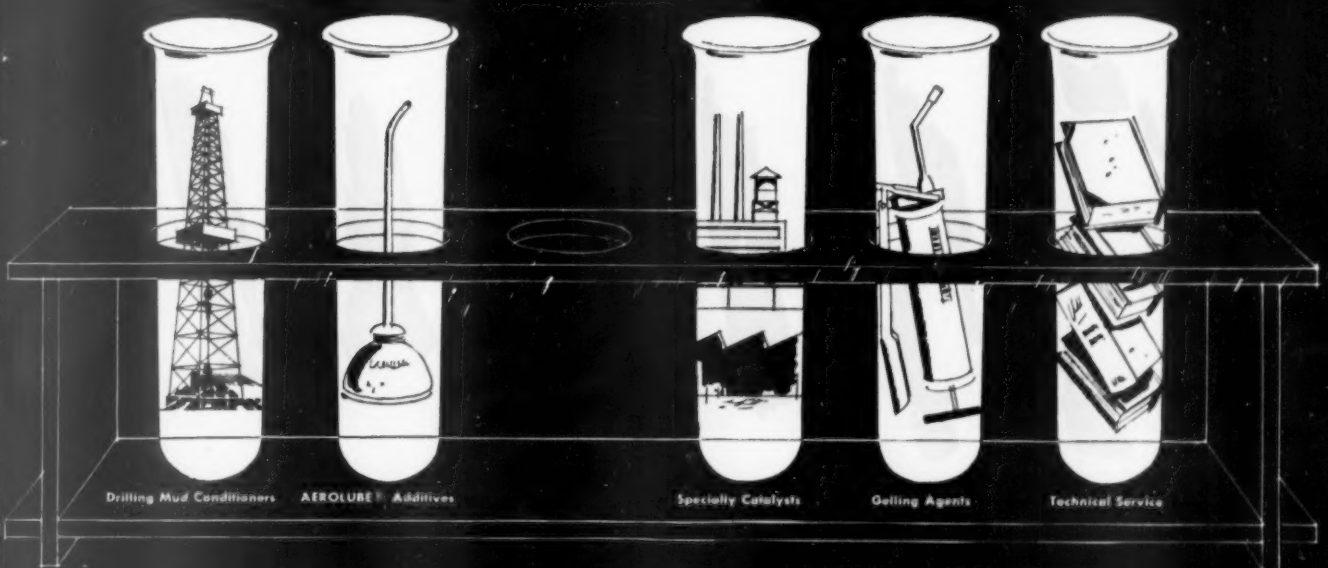
Cyanamid Petroleum Chemicals—results of an extensive development program—are now helping to speed the flow from well to consumer of every type of petroleum product.

For example: among the five out of six fluid cat cracking refiners who use synthetic catalyst, nine out of ten use Cyanamid's AEROCAT® MS Catalyst.

AMERICAN Cyanamid COMPANY

PETROLEUM CHEMICALS DEPARTMENT, DIV. OG-5
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

In Canada: North American Cyanamid Limited, Toronto and Montreal



Drilling Mud Conditioners | AEROLUBE® Additives | Specialty Catalysts | Gelling Agents | Technical Service

Graphic Instrumentation . . . *from idea to installation*

SIMPLER supervision, greater operating efficiency . . . improved coordination . . . these are some of the contributions that graphic instrumentation is making in the process industries. Recognizing the ever increasing importance of graphic techniques, Honeywell offers complete engineering service . . . covering instrumentation, panel design, and construction.

Instruments

Tel-O-Set miniature indicators and recorders are supplied for temperature, pressure, flow and liquid level. They take a front-of-panel space only 5 inches square . . . fit readily into process diagrams. They meet the most critical demands for accuracy, simplicity, and utility.

Behind the panel are compact *Tel-O-Set* Controllers. They provide a choice of control actions.

Console desks, with integrally-mounted *ElectroniK* Precision Indicators, give operators a convenient means of monitoring a large number of critical temperatures.

For remote transmission, Honeywell has a full line of temperature, pressure, flow and level transmitters and receivers of both pneumatic and electric types . . . working with a broad selection of sensing elements.

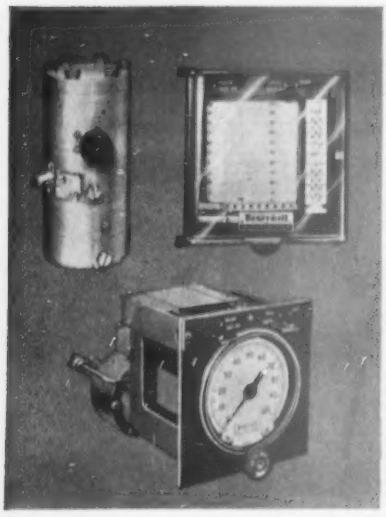
Panel Design

Every panel is custom-designed for its intended job by Honeywell's staff of panel engineers. After initial consultations, they develop a layout that fits all instruments, signals, remote control stations and other equipment in a coordinated design. All elements are located for greatest convenience and ease of manipulation. The overall appearance is made attractive and simple to follow, to aid in reducing operator fatigue. Final working drawings are prepared following consultation with the customer . . . then actual fabrication begins.

Panel Construction

In Honeywell's shop devoted exclusively to panel production, skilled workmen do a complete assembly job. Every instrument, controller and accessory is mounted in place. All back-of-panel wiring and piping is completed, so the board is ready to connect to plant equipment. Before shipment, the entire panel goes through rigorous tests to assure trouble-free installation and start-up when the panel reaches its destination.

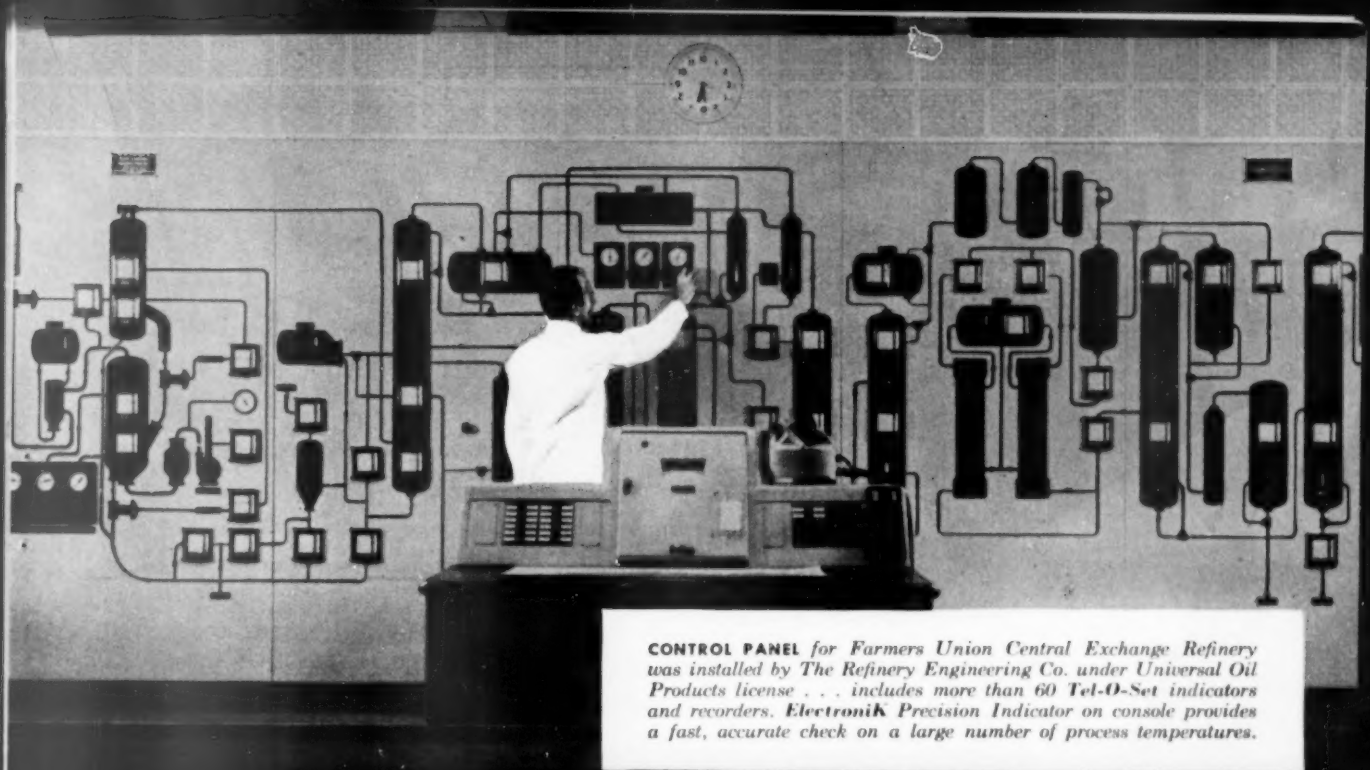
Efficiency- *for any*



Instruments

Design

Construction



CONTROL PANEL *for Farmers Union Central Exchange Refinery was installed by The Refinery Engineering Co. under Universal Oil Products license . . . includes more than 60 Tel-O-Set indicators and recorders. ElectroniK Precision Indicator on console provides a fast, accurate check on a large number of process temperatures.*

boosting graphic control *refinery, large or small*

THE operating economies of Honeywell centralized graphic instrumentation apply equally well to any refinery—whether it be an independent or one of the biggest producers. Take, for example, the panel shown above. Designed and built by Honeywell for the Farmers Union Central Exchange Refinery at Laurel, Montana, it has every feature of graphic control that advanced design can build into it.

The panel concentrates the operation of a 12,500-barrel-per-day plant, consisting of a fluid catalytic cracker, gas concentration unit and catalytic polymerization unit. *Tel-O-Set* indicators and recorders display every critical process variable for the guidance of operators. Every adjustment for shifting variables is right at the operator's fingertips—an important convenience for plants where market demands change frequently. *Tel-O-Set* controllers behind the panel do the "brainwork" of control—flexibly and accurately—keep all controlled variables accurately in line.

Attractive appearance of the panel aids in reducing operator fatigue . . . simplifies training of personnel. And functional design, both on the front and the back of the panel, speeds installation and service.

Expert design has made Honeywell graphic panels the choice of leading refineries and consultants throughout the world. Your local Honeywell engineering representative will be glad to discuss your own process control in detail . . . and he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4488 Wayne Ave., Philadelphia 44, Pa.

● **REFERENCE DATA: Write for Bulletin 85-20, "Centralized Instrumentation . . . unlimited."**

MINNEAPOLIS
Honeywell
BROWN INSTRUMENTS
First in Controls

UTEX

Look Us Up!

at the OIL SHOW

BOOTH 16, CALIFORNIA BLDG.

By PROGRESSING along with the vast expansion of the OIL INDUSTRY, and keeping pace with the ever-changing mechanical packing and gasket requirements, we have been able to develop NEW TECHNIQUES peculiar to the manufacture of our products.

We have combined well over 100 years of practical experience and technical knowledge with honest endeavor... to manufacture QUALITY PRODUCTS that have gained the confidence and high regard of our customers everywhere.

Our MODERN, UP-TO-DATE, ever-expanding plant is capable of handling your requirements.

Any inquiry, large or small, will get the same courteous, detailed attention.

UNIVERSAL'S *NEW* CATALOG

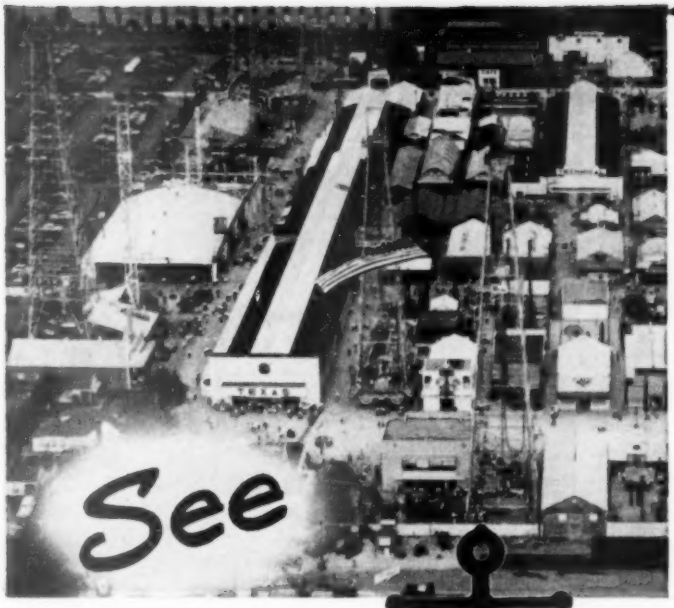
completely covering all types of packings and gaskets — is available on request.

Oil Field Specialties Section

4197

UNIVERSAL PACKING AND GASKET COMPANY

5210 Clinton Drive Houston 20, Texas



ANCHOR at the Oil Show

for hydraulic hose assemblies, adapter unions, and pipe fittings that are safer, longer-lasting, dependable

Come to *Booth No. 69* in the Texas Building at the International Petroleum Exposition, Tulsa, May 14 through 23. There you'll see why it's easy to get top-flight hydraulic-line performance in oil-field service when you specify Anchor. Anchor gives you the most complete line of hydraulic hose assemblies, adapter unions, and pipe fittings available anywhere — the component that fits each of your jobs exactly. Look at the features of these units that mean safer, more dependable fluid-power transmission for you — wherever oil-field equipment is used.

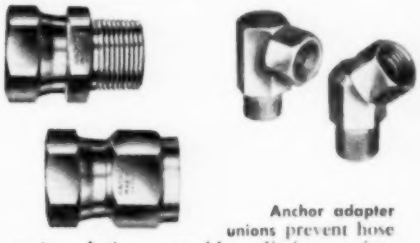
ANCHOR COUPLING CO. INC.

LIBERTYVILLE, ILLINOIS

Factory Branch: Dallas, Texas *Factory Branch: Detroit, Michigan*

Find out how the Anchor line can save you time, trouble, and money — no matter what branch of oil-field work you're in. Get the complete story at Booth No. 69 during the Oil Show.

Anchor reusable couplings for one-wire braid cotton cover hose let you make fast repairs in tough oil-field service. Only tools required to assemble couplings and hose are a vise, oil can, and wrench. Leak-proof and blow-off proof. Reduce hose assembly inventory.



Anchor adapter unions prevent hose strains during assembly, eliminate pipe-threaded joints. Unions are neat, efficient — simplify piping jobs.

Anchor steel pipe fittings handle maximum working pressure of 3500 psi. Copper-brazed—united in strong, solid piece. Neat, easy to install in confined spaces.

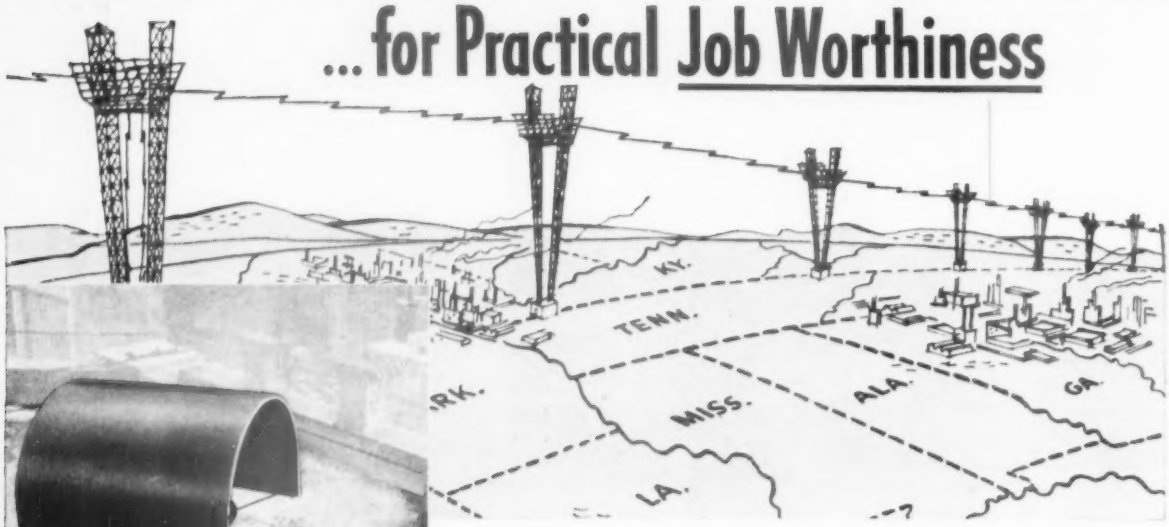
Anchor ductile-sleeve hose couplings for high-pressure work. Exclusive, patented grip virtually makes coupling part of reinforcing wire of hose — ends leaks and blow-offs.

NEW!
REVOLUTIONARY
ANCHOR FLANCO
SPLIT-FLANGE CLAMP
Positive leakproof connection without threaded joints. Bolt centers are located to distribute the forces evenly and prevent tilting of the clamp halves. Easy to assemble with small automotive-type wrench.

D-18

Motorola Proves-Up Microwave

... for Practical Job Worthiness



Operating on a round-the-clock basis for Texas-Illinois Natural Gas Pipeline Co., this Chicago roof-top installation terminates a thousand-mile Motorola Microwave system that provides the ultimate in industrial communications.

Simultaneous transmission of numerous telemetering and voice signals over one radio-frequency carrier allows positive, instantaneous control over widely separated, remote system facilities.

Successful Motorola Engineering has produced the kind of thoroughly dependable Microwave that Industry and Safety Services are adopting with justified confidence.

Motorola systems are in and working! Thousands of miles of multi-channel Motorola Microwave systems, with hundreds of operating stations, have been designed, installed and are in daily operation for many pipeline companies, civil agencies and airlines. Eight Motorola systems have been operating 24 hours daily, non-stop, for over four years! With additional major systems under construction, Motorola continues to add to the extensive background of field and engineering experience that has brought outstanding industry acceptance. Below is a partial list of systems installed and operating, and those under construction (*) or under contract (**):

Job-Proven Microwave . . . by the Leaders of the 2-Way Radio Industry

For full details—write Dept. 2286-CG

Motorola Systems Are In and Working for These Companies:

Pacific Power and Light Co., Portland, Ore.
Brazos River Electric Transmission Cooperative, Waco, Tex.
Illinois Power Co., Decatur, Ill.
Central Illinois Public Service Co., Springfield, Ill.
Pan American Pipeline Co., Houston, Tex.
Shell Pipeline Co., Houston, Tex.
Panhandle Eastern Pipeline Co., Kansas City, Kans.
Mid-Valley Pipeline Co., Longview, Tex.
Southern Counties Gas Co., Los Angeles, Calif.
*La Fourche Telephone Co., Golden Meadow, La.
*Greenwood Telephone Co., Greenwood, So. Car.
*Santa Fe Telephone Co., Melrose, Fla.
*Middle South Utilities, Pine Bluff, Ark.
*Bonneville Power Administration, Chehalis, Wash.
*Sinclair Pipeline Co., Independence, Kans.
*Freeport Sulfur Co., New Orleans, La.
*Texas Electric Co., Ft. Worth, Tex.
**West Coast Telephone Co., Everett, Wash.
U. S. Atomic Energy Commission
**Dayton Power & Light Co., Dayton, O.
**Southern California Edison Co., Los Angeles, Calif.

—with 20 additional systems under construction

Motorola Microwave

Motorola Communications & Electronics, Inc.

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900 N. Kilbourn Ave., Chicago 51, Illinois

Rogers Majestic Electronics Ltd., Toronto, Canada

Save - two ways!

with

WAUKESHA DIESEL - GAS CONVERSION KITS

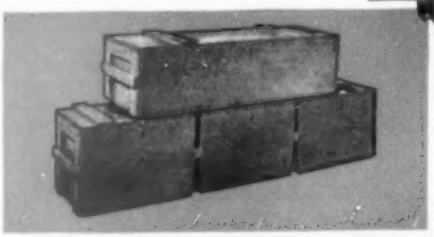
SAVE Use the most economical fuel for your working location **SAVE** Buy double value in ONE engine

Conversion Kits are available for the three biggest Waukesha *Diesel* Oil Field Engines or Power Units — Models 6-WAKD (1197 cu. in.), 6-NKD (1905 cu. in.), and 6-LRD (2894 cu. in.).

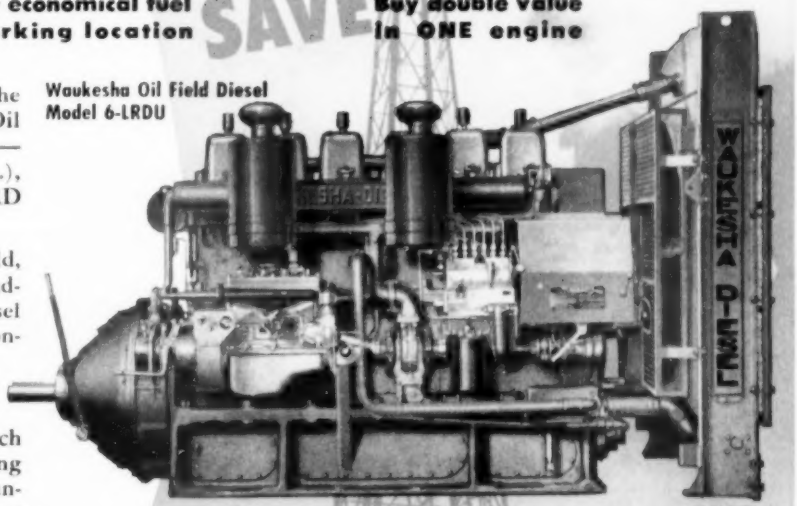
In the oil fields of the world, Waukesha is a by-word for dependable full-rated power on gas or Diesel fuels. The Waukesha-engineered Conversion Kit gives you the advantages of two of these real oil field engines—neither of them a compromise! All the basic features which contribute to the ruggedness and long life of the Waukesha Diesel are unchanged in the gas conversion, but the converted engine is a true gas engine with the special features that contribute to power and efficiency where gas is the most economical fuel. Send for descriptive bulletins or call your Waukesha Oil Field Distributor.

WAUKESHA MOTOR COMPANY
WAUKESHA WISCONSIN
New York • Tulsa • Los Angeles

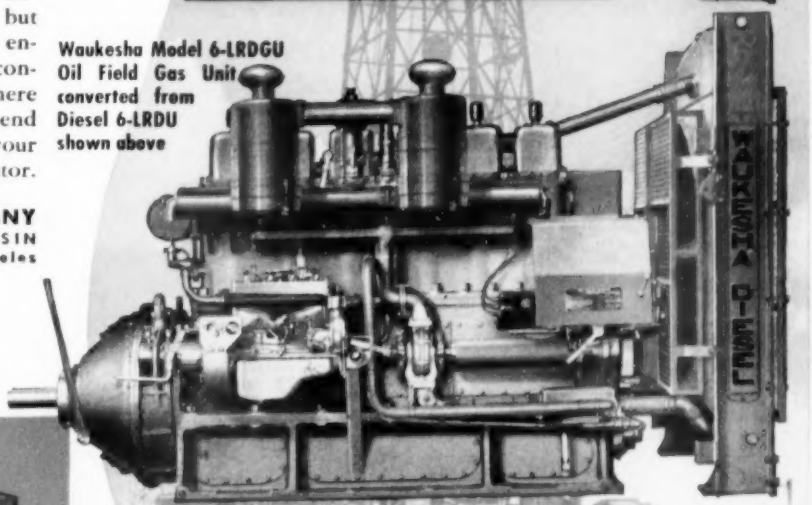
Conversion Kits contain special cylinder heads for gas fuel, top cylinder oilers, a complete gas fuel system, complete ignition system, and accessories.



Waukesha Oil Field Diesel Model 6-LRDU



Waukesha Model 6-LRDGU Oil Field Gas Unit converted from Diesel 6-LRDU shown above



175

WAUKESHA

Diesel **OIL FIELD POWER** Gas

at the Oil Show... see LADISH

You are cordially invited
to examine the
LADISH *Controlled Quality* LINE
on display in Booths 7, 8 and 9
KANSAS BUILDING
INTERNATIONAL PETROLEUM EXPOSITION

On display you will find the Ladish Controlled Quality line that offers an unrestricted selection of your fittings needs... in a complete range of sizes and types... in a wide variety of materials including carbon, stainless and alloy steels and non-ferrous metals.

SPLIT TEE

3-R
Extra Long
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INSPECT THESE LADISH DEVELOPMENTS

SPLIT TEE—An improved means for reinforcing branch connections.

3-R ELBOW—A development that improves pipe line efficiency.

THE COMPLETE *Controlled Quality* FITTINGS LINE
PRODUCED UNDER ONE ROOF... ONE RESPONSIBILITY

LADISH CO.

CUDAHY, WISCONSIN
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District Offices: New York • Buffalo • Pittsburgh • Philadelphia • Cleveland • Chicago • St. Paul • St. Louis • Atlanta • Houston • Tulsa • Los Angeles • San Francisco • Havana • Mexico City • Brantford, Ont.

. . . A COMPLETE LINE OF *Controlled Quality* FITTINGS

SEAMLESS WELDING FITTINGS

Size range ½ inch through 36 inches . . . Standard Weight through Double Extra Strong and a wide range of schedules.

FORGED STEEL FLANGES

ASA Flanges from ½ inch through 24 inches . . . 150 pounds through 2500 pounds pressure.

FORGED STEEL FITTINGS

Screwed and Socket Welding Types. Size range ⅛ inch through 4 inches . . . 2000 pounds through 6000 pounds pressure.

LARGE DIAMETER and T.E.M.A. FLANGES

Large Diameter Flanges to 96 inches. Complete range of T.E.M.A. Flanges. Rolled Rings to 196 inches O.D.

LONG WELDING NECKS

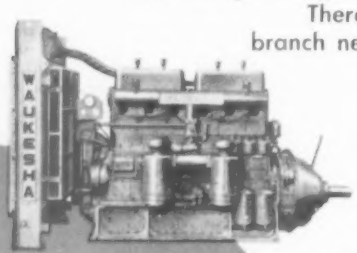
Size range 1 inch through 24 inches . . . 150 pounds through 2500 pounds pressure.

there's NO END

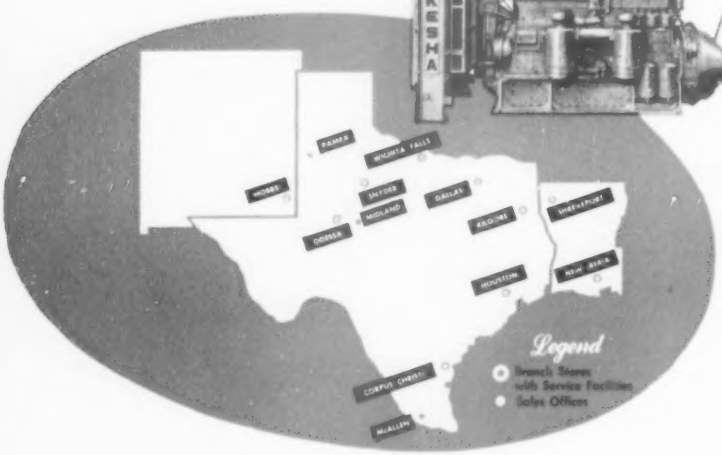
TO THE SERVICE AVAILABLE AT WAUKESHA SALES & SERVICE, INC.

From sun-up to sun-up . . . right around the clock . . . your nearby Waukesha Sales and Service, Inc., service shop is ready to give prompt attention to your repair needs. Each branch is staffed with experienced, factory-trained mechanics who ***know*** your engine and how to keep it in tip-top condition at lowest cost. So the next time your engine needs servicing . . . bring it back home. There is a Waukesha Sales and Service, Inc., branch near your operations in Texas, Louisiana, Southern Arkansas, and New Mexico.

your waukesha engine



is treated best at home



WAUKESHA

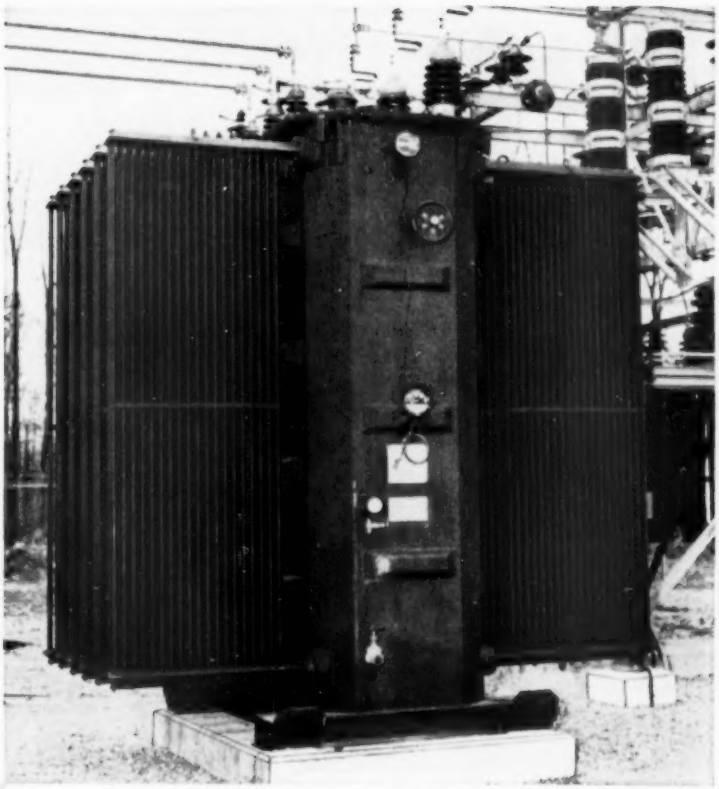
Sales & Service, Inc.

1422 MAURY ST. • HOUSTON, TEXAS

EXCLUSIVE DISTRIBUTORS FOR WAUKESHA PRODUCTS IN TEXAS, LOUISIANA AND NEW MEXICO

Wagner

Transformers used by Studebaker in new power distribution system planned for present and future needs



6000 KVA WAGNER POWER TRANSFORMER where power is received at 26.4 kv and is stepped down to 13.2 kv for distribution to the seven unit substations in the plant.

1000 KVA WAGNER UNIT SUBSTATION TRANSFORMER, at one of the five load centers that deliver 440 volt, three phase power to large machines and equipment.

New Jersey plant can convert from military to auto assembly production without extensive system changes!

The modern power distribution system at the Studebaker Corporation plant at New Brunswick, New Jersey has been planned with an eye to the future. While the plant is now manufacturing military jet engine parts, it will eventually become eastern auto assembly headquarters for Studebaker.

The power load is divided between seven load center substations, all equipped with Wagner Unit Substation Transformers, spaced 160 feet apart down the center of the building. In addition to insuring an adequate power supply for present purposes, this plan provides a dependable supply of power from short secondary feeders at any time in the future. * * *

Why not discuss your next transformer installation with the Wagner engineer nearest you? There are Wagner branches in 32 principal cities. Bulletin TU-181 gives full information on Wagner Power Transformers, and Bulletins TU-13 and TU-56 tell about Wagner Unit Substation Transformers. Write for your copies.

WAGNER ELECTRIC CORPORATION
6389 Plymouth Ave., St. Louis 14, Mo., U.S.A.

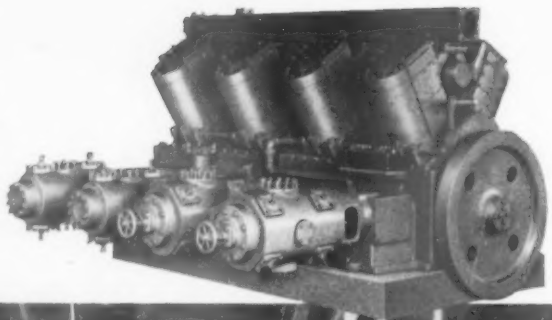
ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES
AUTOMOTIVE BRAKE SYSTEMS—AIR AND HYDRAULIC

Don't miss Wagner's exhibit at the International Petroleum Exposition, Booths 35 and 36, California Building.

T53-9

at Snyder Plant of

STANDARD OIL COMPANY of TEXAS



7 VETERAN (16 years old) XVG's + 8 MODERN SVG's = 5340 hp of trouble-free casing head gas compression

The 15 Ingersoll-Rand gas-engine-driven compressors shown above include seven XVG units which have been in almost continuous operation since 1936 . . . plus eight modern-design SVG units. The XVG's were moved to Snyder Plant in West Texas from an old plant in Ward County, requiring remarkably little work at the time of relocation.

Old and new units alike are all giving *excellent service*, compressing casing head gas to 465 psig pressure for delivery to the absorbers.

The seven XVG's are rated at 260 hp each and the eight SVG's at 440 hp each—a total of 5340 hp.

Ask your Ingersoll-Rand representative for complete information on gas-engine compressor performance and economy.

Ingersoll-Rand

11 BROADWAY, NEW YORK 4, N. Y.

850-6

COMPRESSORS • AIR TOOLS • ROCK DRILLS • TURBO BLOWERS • CONDENSERS • CENTRIFUGAL PUMPS • DIESEL AND GAS ENGINES

THE *All-Bethlehem* DRILLING RIG

A workhorse with *get-up and go*

Each of the many components in a Bethlehem turnkey drilling rig embodies the latest advances in engineering—something very important, in view of the loads imposed by modern drilling. And all the components are designed for top performance at any speed. A Bethlehem rig gives you "balanced" operation—harmony and smoothness from crown block to drill bit. There are no mismatched elements anywhere.

You'll find that Bethlehem equipment is conservatively rated, with more than ample reserve for peak demands. You'll find, too, that a Bethlehem rig is a workhorse, one that requires no coddling; one with *go* from the minute you start the engines.

So next time make it an all-Bethlehem outfit—Bethlehem drawworks, slush pumps, swivel, rotary—everything. We have the proper rigs for shallow, medium, or deep-hole drilling, whichever your needs call for. Complete details are always available from any Bethlehem Supply office; phone the one nearest you.

BETHLEHEM SUPPLY COMPANY

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Export Distributor: Bethlehem Steel Export Corporation
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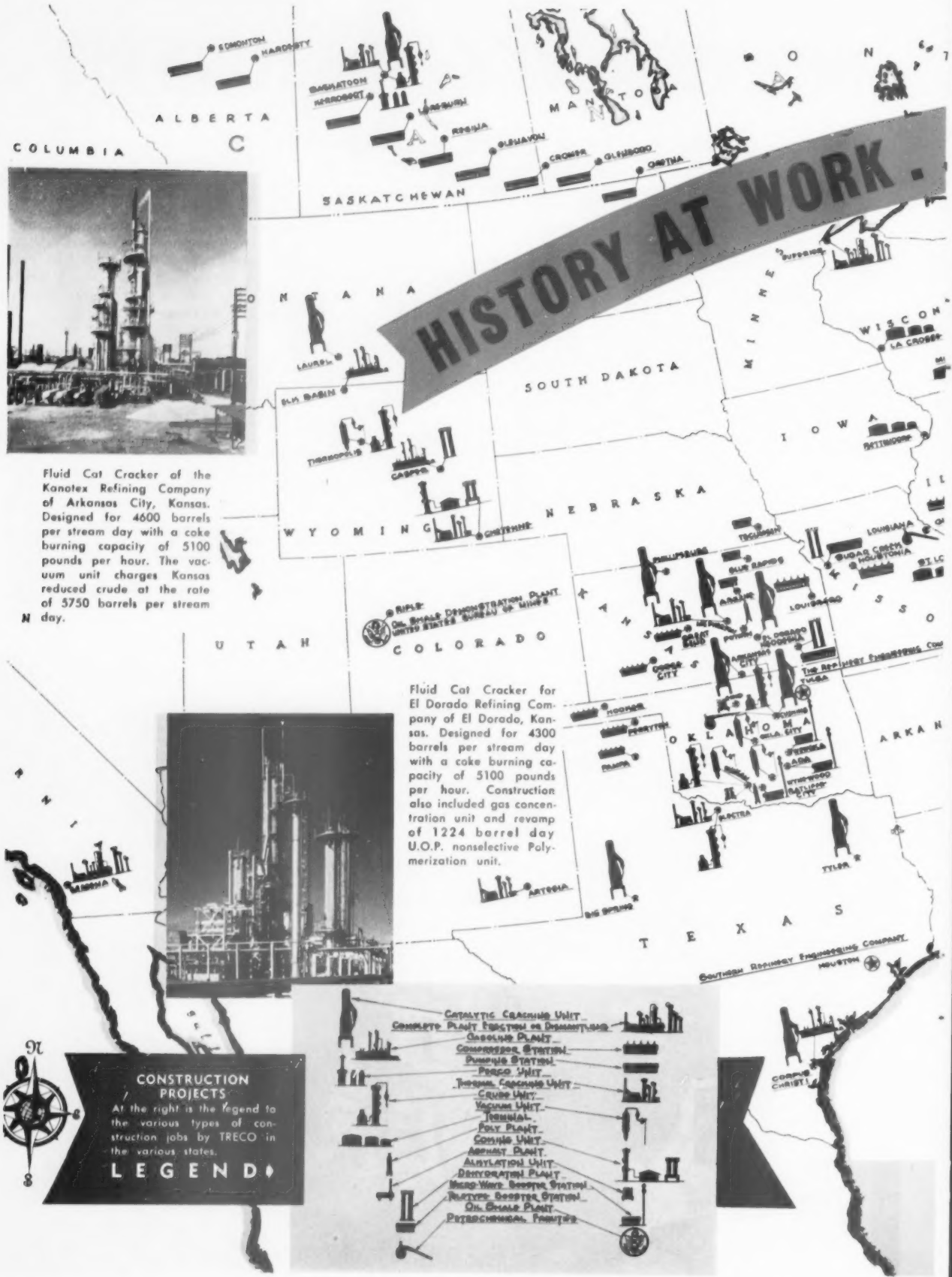
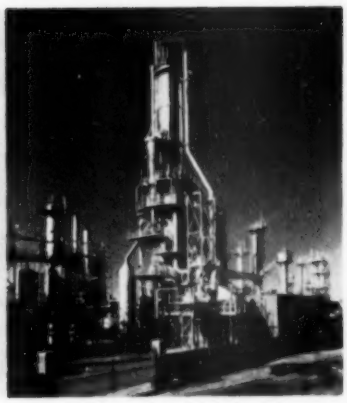
Canadian Representative: Rocky Mountain Supply Co., Ltd.
Calgary, Alberta



Fluid Cat Cracker of the Kanotex Refining Company of Arkansas City, Kansas. Designed for 4600 barrels per stream day with a coke burning capacity of 5100 pounds per hour. The vacuum unit charges Kansas reduced crude at the rate of 5750 barrels per stream day.

Fluid Cat Cracker for El Dorado Refining Company of El Dorado, Kansas. Designed for 4300 barrels per stream day with a coke burning capacity of 5100 pounds per hour. Construction also included gas concentration unit and revamp of 1224 barrel day U.O.P. nonselective Polymerization unit.

. . . IN REFINING . . . . .



Fluid Cat Cracker for Farmers Union Central Exchange, Laurel, Montana, of 5,000 barrels per day at 70% conversion. 2 stage gas concentration units; solid phosphoric acid Polymerization unit, Tank car and truck loading facilities for LPG.

Last year was the greatest construction year in the refining industry. This year promises to be even greater. Thinking operators know they can't win in quantity or quality production with out-moded plants. That's why TRECO receives contracts for a number of new plants each year, putting the owner in a more competitive position.

REFINERY ENGINEERING Company has proven to the industry that it builds a quality refinery, producing top-quality products; "on stream" with new records for speed of construction. From an economic study of your needs to operating costs, yields and profits; through design and construction, TRECO has the knowledge, experience and manpower to complete the most complicated construction and installation in the shortest possible time.

Call on TRECO for a conference while your project is still in the planning stage. Executives of our organization are as near as your telephone.

TRECO has been licensed to design, engineer and construct Catalytic Reforming Units.

Write for a free copy of our new brochure showing many of the refineries we have constructed. A copy will be mailed you promptly upon request on your company letterhead.

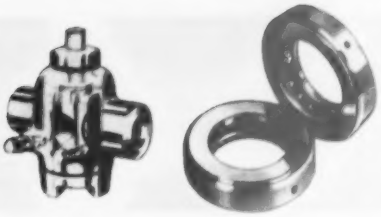
TRECO

REFINERY ENGINEERING Company

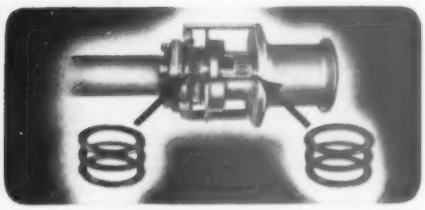
HOUSTON, TEXAS TULSA, OKLAHOMA TORONTO, CANADA

Helping Oilfield Equipment Do a Better Day's Work

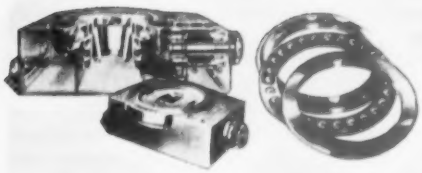
SIGNIFICANT FACT: In the last decade, as wells have gone deeper—and as equipment quality has gone deeper to meet this tougher task—Aetna oil field bearing applications have increased by more than 100%. **SIGNIFICANT REASON:** The conception and building of special bearings and parts for torture service is a basic part of Aetna's business—has been for over a third of a century. From Aetna know-how has come the solution to more than 2000 of American industry's "special" anti-friction problems. Why not tap this rich pool of experience next time YOU have an anti-friction problem? Aetna engineers are at your disposal. Write today!



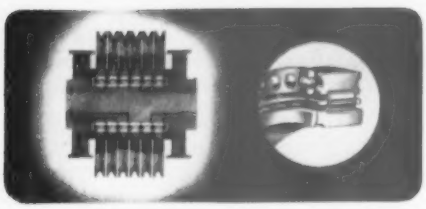
In of 10,000 lb. capacity, Aetna self contained bearings make for easier assembly, assure reserve capacity and smoothness under every speed, shock and load condition encountered in plug valve operation.



In two Aetna 3-piece bearings provide the high fatigue resistance, added load capacity and other operational advantages which make for longer, more efficient, more economical cathead performance.



In the main bearing is an Aetna angular contact type—33" O.D., 3" balls, load capacity—200 tons . . . a product of Aetna's unsurpassed machining, hardening and grinding facilities for heavy duty sizes up to 38" O.D.



In (crown and traveling) Aetna's new, patented, combination cylindrical roller and ball thrust bearings divorce bearing loads into pure thrust and pure radial. Result: Width and weight of blocks are reduced, their strength and durability increased.

In Aetna one direction, flat seat, grooved raceway bearings are employed to take the shock, constant load and intermediate speeds encountered—to assure round-the-clock reliability and longer equipment life.

VISIT **Aetna**

AT THE OIL SHOW! BOOTHS 83 AND 84

AETNA BALL AND ROLLER BEARING COMPANY
4600 SCHUBERT AVENUE • CHICAGO 39, ILLINOIS
OIL COUNTRY REPRESENTATIVE: C. W. McNEIL, 707 M & M BLDG., HOUSTON

LATEST MODEL

Alkylation Unit for SOHIO

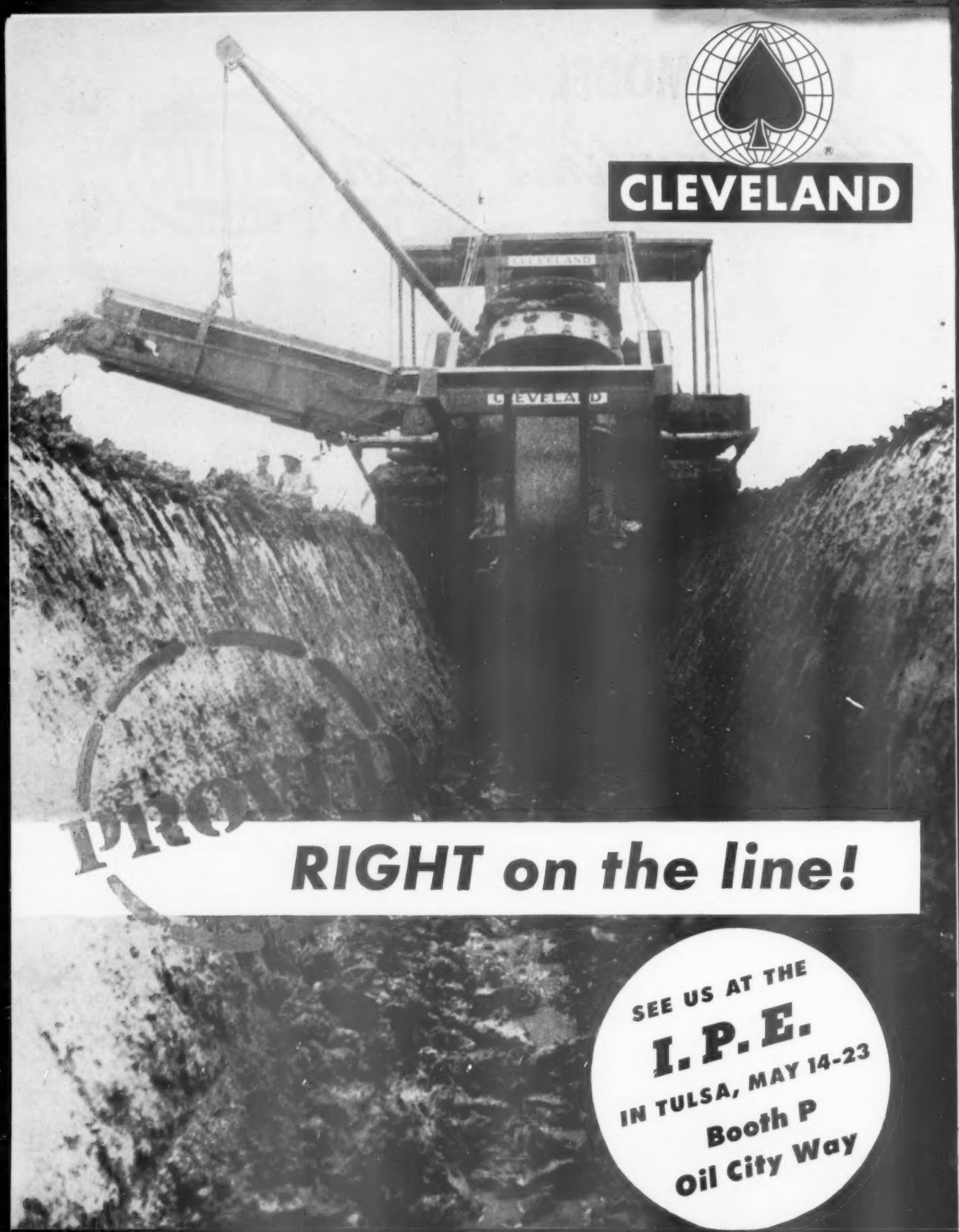
THIS model of an alkylation unit was built from engineering drawings to a scale of ¼ inch to 1 foot. Its purpose is to help check engineering and speed up construction of a new alkylation unit designed and now being constructed by Arthur G. McKee & Company for Standard Oil Company of Ohio at Toledo.

The Sohio project is one of four new alkylation units now in progress by the McKee organization. The others are located at Wood River, Illinois; Norco, Louisiana and Texas City, Texas. Combined capacity of the four units will be approximately 21,000 barrels of alkylate production per stream day.

ENGINEERING, PURCHASING AND CONSTRUCTION FOR THE PETROLEUM REFINING AND IRON AND STEEL INDUSTRIES

Arthur G. McKee & Company • Established 1905

Headquarters: McKee Building, 2300 Chester Avenue, Cleveland 1, Ohio.
Offices: New York • Tulsa, Oklahoma • Union, New Jersey • Washington, D. C.
British representatives of Metals Division: Head, Wrightson & Company, Ltd.
Canada: **Arthur G. McKee & Company of Canada, Ltd., 350 Bay St., Toronto 1, Ont.**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PROUD
RIGHT on the line!
SEE US AT THE
I. P. E.
IN TULSA, MAY 14-23
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THE CLEVELAND TRENCHER CO.
Pioneer of the Modern Trencher
20100 ST. CLAIR AVENUE • CLEVELAND 17, OHIO

NOW! Completely new FORD TRUCKS for '53

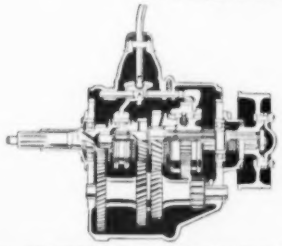
Scores of brand-new, TIME-SAVING features in the completely new Ford Trucks for '53 add a new dimension to truck economy. And you can choose from over 190 models in a greatly expanded line.

Ford Trucks are leaders in *low first cost* and *low running costs*. They last longer for *low ownership* costs. Now for '53, new TIME-SAVING features cut trucking costs still further.

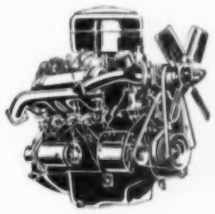
NEW 6½-FT. PICKUP box has new rigid, clamp-tight tailgate.

NEW "DRIVERIZED" CABS cut driver fatigue! One-piece curved windshield 55% bigger. I-REST tinted glass (extra cost). Wider seat with counter-shock seat snubber.

Deluxe cab shown in all illustrations



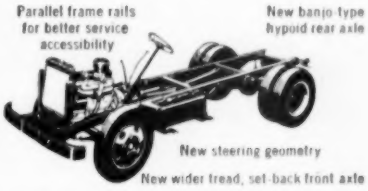
NEW SYNCHRO-SILENT transmissions for easier shifting—no "double clutching"—standard all models. New *Fordomatic* or Overdrive on F-100 at extra cost.



NEW LOW-FRICTION POWER in 3 overhead-valve engines—*Cost Clipper* Six, *Cargo King* V-8's. Five engines in all with famous Truck V-8 and Big Six.

NEW SHORT TURNING for better maneuverability. New wider tread gives 37° steering angle. New set-back axles shorten wheelbase, improve weight distribution without reducing capacity.

NEW SPRINGS! NEW BRAKES! Longer front and rear springs for easier ride, longer life! New self-energizing brakes for better control . . . double-cylinder type, rear, on Series 500 and 600.


Parallel frame rails for better service accessibility
New banjo-type hypoid rear axle
New steering geometry
New wider tread, set-back front axle

NEW TIME-SAVING FEATURES THROUGHOUT! All new . . . all the way! New fast controls and new power save truck time on the road . . . New service accessibility saves truck time in the shop.

Designed for today's hauling needs!

FORD *ECONOMY* TRUCKS

SAVE TIME! • SAVE MONEY! • LAST LONGER!

BIGGEST FORD TRUCK ever built—new Ford Series F-900 has G.C.W. rating of 55,000 lbs. as a tractor and G.V.W. truck rating of 27,000 lbs.

Good Drivers Drive Safe Trucks

FREE! MAIL THIS COUPON NOW!

FORD Division of FORD MOTOR COMPANY
P.O. Box 658, Dearborn, Michigan

Please send me without charge or obligation, complete details on new Ford *Economy* Trucks for '53!

FULL LINE ☐ HEAVY-DUTY MODELS ☐
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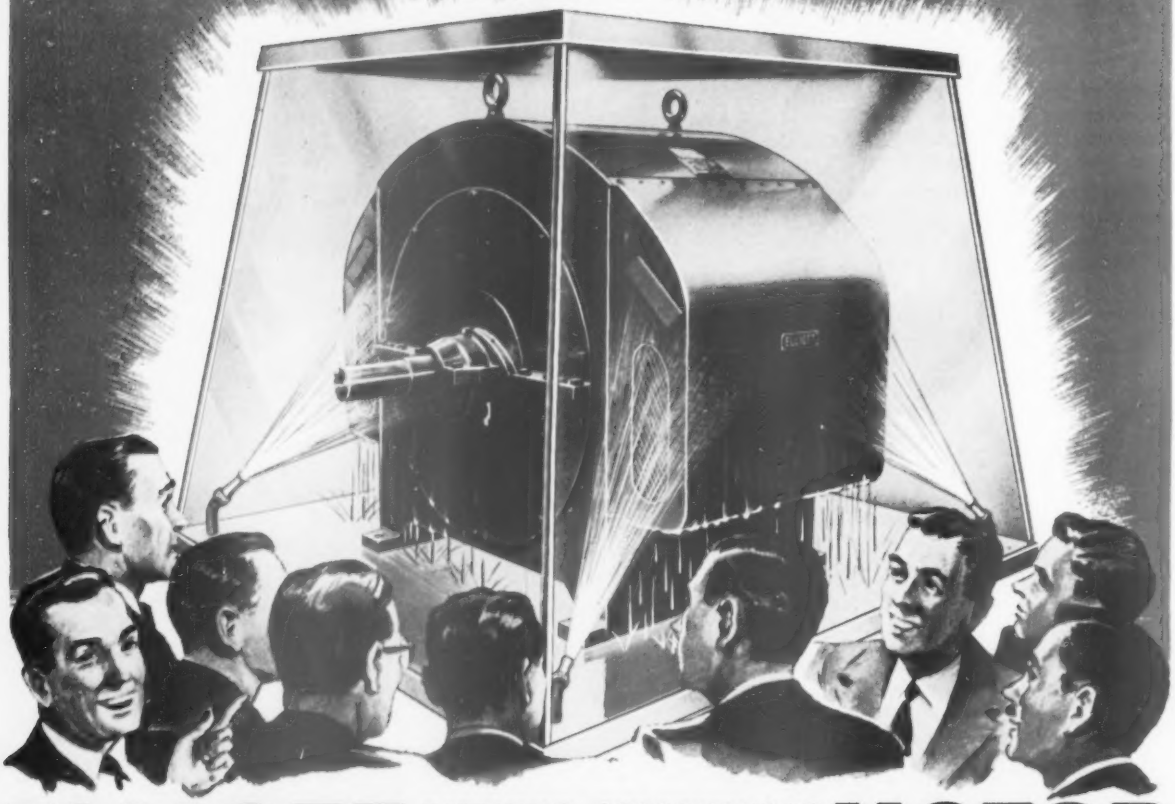
It operates in a constant deluge



ELLIOTT *OUTDOOR SPLASHPROOF WEATHER-PROTECTED* MOTOR

See it at the oil show!

International Petroleum Exposition and Congress, Tulsa, May 14-23.

SEE A MAN-MADE STORM shoot four heavy sprays of water right into the ventilating inlets and discharge openings of an operating motor to demonstrate the most complete moisture separation ever designed into an open-type motor. See the dust protection too—integrally designed non-clogging filters, easily removable for cleaning without stopping the motor.

See this revolutionary motor design which has made industrial history since World War II. An engineer's dream in 1946, it has grown to a major factor in present-day cost-saving station and plant design in utilities and many industries. This all-weather design has triumphed over conditions regardless of where installed—in salt spray and fog on both coasts—in hot humid areas of the southeast—in hot dusty desert conditions of the southwest—in extreme cold and snow of the north.

If you have cost-of-construction problems—yet you cannot sacrifice reliability—then stop by the Elliott booth, No. 125-126 Oklahoma Building, at the Oil Show and discuss your problems with the people who pioneered the outdoor splashproof motor; or write Elliott Company, Ridgway, Pa.

Elliott FABRI-STEEL MOTORS AND GENERATORS

ELLIOTT Company

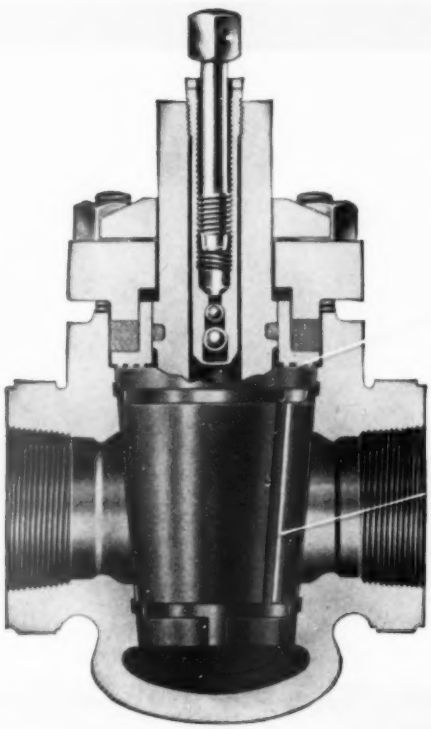
RIDGWAY DIVISION

FOR MOTORS 1-200 HP. CROCKER WHEELER DIV. AMPERE, N. J.

R3-18

Oh, I see

OIC now offers a complete line of Lubricated Plug Valves . . .



with two added features

1 Triple seal gives more effective sealing at shank with ease of turning.

2 Lubricant grooves that are never exposed to the flowing liquid.

OIC Tapered Lubricated Plug Valves assure positive, leakproof control of flow . . .

O-Ring . . . under initial compression, gives extra protection against leakage past shank.

Resilient Packing . . . completely enclosed in nonrotating metal parts, tends to seat the plug tightly in body without excessive cover tightness.

Labyrinth Seal . . . series of concentric rings on gland collar make firm contact between collar and top of plug face, providing additional seal.

2 Vertical Lube Grooves . . . 180° apart. When plug is given quarter turn, neither of these grooves is exposed to liquid flow.

Lubricant Chamber . . . under pressure from screw piston, lubricant creates upward force during lubrication, tending to free plug for easy turning.

Plug Lapped to Body . . . to assure perfect, leakproof fit.

Order in semisteel or steel . . . from your local OIC Distributor. Write for literature describing the advantages of OIC Lubricated Plug Valves.

OIC FOUNDED 1883

THE OHIO INJECTOR COMPANY • WADSWORTH, OHIO

VALVES | **FORGED & CAST STEEL, IRON & BRONZE, LUBRICATED PLUG VALVES**

TRIFLES?

Yes...until you need them!

... Then, nine times out of ten, you need them *right* away. That's where your nearest Metal Goods Corporation warehouse comes in. For your convenience, Metal Goods Corporation maintains the largest and widest selection of standard industrial fastenings in the southwest.

If you have an unusual fastening problem requiring individual attention, Metal Goods Corporation can furnish you with "specials", made up in any of the non-ferrous or stainless alloys.

If you need technical assistance in determining which type of fastening is most economical for you to use, Metal Goods Corporation offers you the capable counsel of highly-specialized metal men.

You may also be interested in securing Metal Goods Corporation's new Industrial Fastening Catalog. Engineers and Purchasing Agents who have examined it, say it is one of the most complete and easy-to-use catalogs that they have seen. Would you like a copy? No obligation.

Metal Goods Corporation also stocks most commercial forms of aluminum, brass, copper, monel*, nickel*, inconel*, stainless steel, and steel. When in need of metals or fastenings, call your nearest Metal Goods Corporation warehouse first.

Please call, wire, or write the Metal Goods Corporation representative nearest you:

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Phone: AComa 5891

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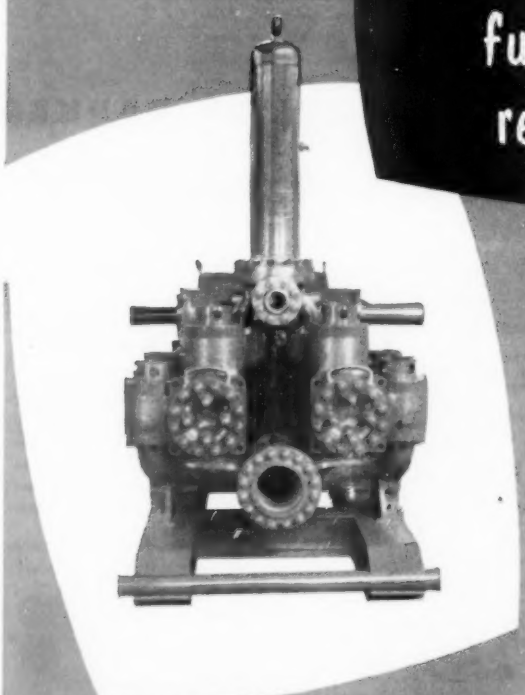
GENERAL OFFICES: ST. LOUIS 15, MISSOURI

divided fluid cylinders
"tell-tale" liner packing
full-flow manifolds
ready accessibility



. . . THESE ARE SOME OF THE EXTRA VALUES BUILT INTO THE BUSINESS END OF A GARDNER-DENVER MUD PUMP. Send for Bulletins FX-10 and P-70.

SINCE 1859

GARDNER-DENVER

Gardner-Denver Company, Quincy, Illinois
In Canada: Gardner-Denver Company (Canada), Ltd.
14 Curity Avenue, Toronto 13, Ontario

THE QUALITY LEADER IN COMPRESSORS, PUMPS AND ROCK DRILLS FOR CONSTRUCTION, MINING, PETROLEUM AND GENERAL INDUSTRY

Dallas • Houston • Tulsa • St. Louis • Los Angeles
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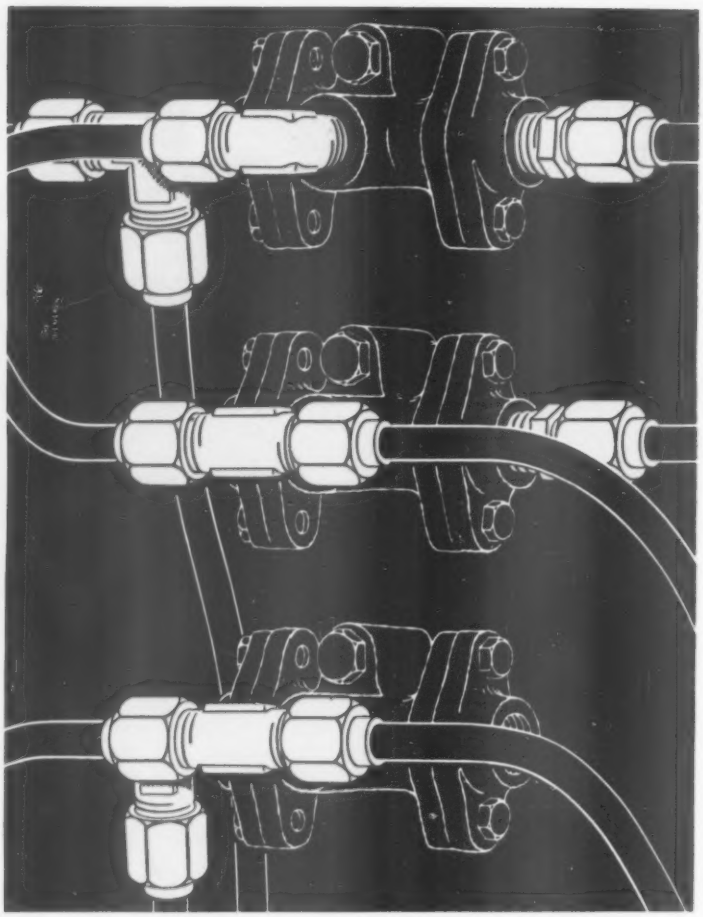
Continental Supply Co., Continental Bldg., Dallas, Texas
Export Division: 50 Rockefeller Plaza, New York, N. Y.
Republic Supply Co., (Of Calif.), 2600 S. Eastland Ave., Los Angeles, Calif.

ON DIESEL ENGINES

This typical Diesel engine manufactured by The National Supply Company, Engine Division, Springfield, Ohio, is equipped with Parker Triple-lok Fittings.



Tube it up...Forget it...WITH PARKER

TROUBLE-FREE TRIPLE-LOK FITTINGS

Diesel service is rugged. Constant vibration puts a severe strain on all engine parts, including fittings connecting fluid handling lines. Yet no leak, however small, can be tolerated.

That's why so many Diesel engine manufacturers rely on Parker Triple-lok Fittings . . . the fitting that meets specifications of the A.S.M.E. Code for Pressure Piping, and J.I.C. and S.A.E. standards. They are leakproof under severest conditions of vibration, elevated temperatures, high pressures and repeated assembly.

So *tube it up* and *forget it* . . . with Parker Triple-lok Fittings. Ask your Parker Distributor for Tube Fitting Catalog 4300, or write The PARKER Appliance Company, 17325 Euclid Ave., Cleveland 12, O.

This does it

Triple-lok . . . 3-piece flare fitting famous for its sleeve . . . the easiest way to install tubing systems. Made in brass, steel, stainless steel, aluminum alloy.

Precision Mark of

Leakproof Tube Fittings

Parker

TUBE FITTINGS • VALVES • O-RINGS

Plants in Cleveland • Los Anaeles • Eaton, Ohio • Berea, Ky.

PUMPS

for FLUID POWER

in vehicles and equipment required for modern exploration, drilling, production, piping and refining of petroleum. Here is a most comprehensive range of sizes, types, capacities and pressures from 0 to 1500, 2000 and 3000 psi together with hydraulic motors, valves and cylinders for developing complete hydraulic circuits. Here is power which combines safety, flexibility, limitless variations and sound economy . . . hydraulic power at its best.

for HANDLING LIQUIDS

Virtually "any substance that will flow through a pipe" can be efficiently and economically handled in small or bulk quantities by Pumps available from this single source. There are deep and shallow well Centrifugal and Turbine Types, Rotating Plunger and Herringbone Pumps embracing a very broad range of types, sizes and constructions.

for VACUUM PROCESSING

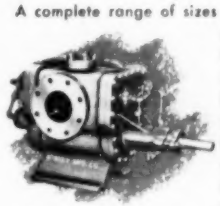
High vacuum pumps for laboratory or high production service in research, vacuum distillation, refrigeration, dehydration, chemical processing, de-aerating, etc.

HYDRECO GEAR TYPE PUMPS

Reversible and non-reversible. Gear type pumps in exclusive FOUR-BOLT design . . . capacities from .5 to 130 gpm and operating pressures to 1500 psi . . . flange or foot mounted . . . furnished with keyed shaft with spline shafts optional. Also dual and tandem models.

KINNEY LIQUID HANDLING PUMPS

A complete range of sizes in Rotating Plunger and Herringbone Gear Pumps to handle light or heavy liquids, sludges, slurries or viscous substances. Available in plain or steam jacketed models and built of special corrosion resistant metals where desired.



KINNEY VACUUM PUMPS

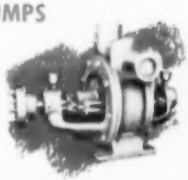
Single stage models to produce absolute pressure readings of 10 microns (.01 mm Hg.) . . . compound pumps producing readings of .2 microns (.0002 mm Hg.) or better. These Kinney High Vacuum Pumps are available in sizes for laboratory as well as high production use.

DUDCO DUAL VANE TYPE PUMPS

DUDCO Pumps provide a broad range of sizes with capacities to 120 gpm and pressures to 2000 psi. Also available in multiple units operating from a single drive. Hydraulic motors with starting torque outputs to 14,000 lb. in. at 2000 psi.

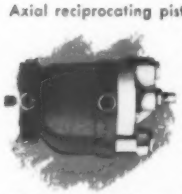
AURORA CENTRIFUGAL & TURBINE PUMPS

Deep well, sump, drainage and condensation return units, household water systems. Industrial low and high pressure liquid handling pumps. Direct motor and countershaft driven horizontal and vertical models. Capacities 3 to 7500 gpm.



STRATOPOWER PISTON TYPE PUMPS

Axial reciprocating piston type . . . constant or variable delivery with capacities of .25 to 10 gpm at nominal speeds of 1500 rpm with maximum of 4500 rpm . . . working pressures to 3000 psi . . . direct engine and individual electric motor driven models.



THE NEW YORK AIR BRAKE COMPANY

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Write—

For detailed information on the type of pump in which you are interested.

See Our Exhibit
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BOOTHS 84N & 85N

THE NEW YORK AIR BRAKE COMPANY
230 Park Ave., Dept. OG, New York 17, N. Y.

Gentlemen: Kindly send additional information on the pumps I have checked.

- ☐ Hydreco Pumps
- ☐ Stratopower Pumps
- ☐ Dudco Pumps
- ☐ Kinney Liquid Handling Pumps
- ☐ Kinney Vacuum Pumps
- ☐ Aurora Pumps

Name .....

Address .....

City ..... State .....

In electrical installations *where QUALITY counts* use CONDULETS*

Quality does count in practically every electrical conduit installation that you make. When you use CONDULETS you know that you are putting in electrical equipment of the highest quality, because CONDULETS have been doubly tested . . in the factory and in the field.

Crouse-Hinds quality control assures a long-lasting product and field records prove it by the test that only time can give. Thousands of CONDULET installations are still in tip-top condition after twenty, thirty, or even more than forty years of dependable service.

The illustration at the right shows four of Crouse-Hinds' basic quality features that are common to all CONDULETS. The fifth, Wedge Nut Fasteners, is an exclusive Crouse-Hinds feature that has made Obround CONDULETS preferred by electricians everywhere.

1. **Taper tapping.** Condulet threads are taper tapped to match tapered conduit threading. Makes a rigid joint that will not loosen. This assures permanent ground continuity . . . important for safety.
2. **Integral bushing.** A smooth rounded surface protects wire insulation.
3. **Material.** Feraloy . . . a special alloy that is strong and tough, resists corrosion, and gives sharp, full threads.
4. **Finish.** A triple treatment provides long-lasting protection . . . exceeds Federal and U. L. specifications.
5. **Wedge Nut cover fastener.** Clear cover opening . . . no projections. No loose parts . . . Wedge Nuts and screws self-retained. No screw holes to align.

More than 15000 items are listed in the Condulet Catalog including a complete explosion-proof and dust-tight line for use in hazardous locations.

On your next job, use CONDULETS . . . they're made right to last longer.

**CONDULET is a coined word registered in the U. S. Patent Office. It designates a product made only by the Crouse-Hinds Company.*

Type EVA Explosion-Proof Lighting Fixture

Type ARE Arktite Receptacle Equipment

Type FS Condulet With Pilot Lamp Receptacle, Switch and Plug Receptacle

Type GUAC Explosion-Proof Junction Condulet

Type VC Vaportight Industrial Lighting Fixture

Type FLB Explosion-Proof Circuit Breaker Condulet

Type EPC Explosion-Proof Motor Starter and Circuit Breaker Condulet

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PETROLEUM CHEMICALS DIVISION

NEWS

May ★ One of a Series of Interest to the Petroleum Industry ★ 1953

What

are the advantages of buying gasoline additives from Du Pont?

1. **COMPLETE LINE** – Du Pont is the *only* supplier manufacturing a complete line of gasoline additives.
2. **EXPERIENCE** – Du Pont has had longer experience than any other U. S. company in making TEL (30 years). It has been making dyes for over 30 years; antioxidants 20 years and Metal Deactivator for 14 years.
3. **QUALITY** – Through the years Du Pont has set up quality control methods that are probably unsurpassed.
4. **TECHNICAL SERVICE** – To help refiners get the best results in the use of additives, Du Pont maintains *five* strategically located district laboratories.
5. **ECONOMY** – In many cases, the Du Pont district laboratories have been able to help refiners substantially reduce their cost of using additives.
6. **CONVENIENCE** – To assure fast, dependable deliveries, Du Pont maintains conveniently located warehouses, rail sidings and truck facilities throughout the country.

Petroleum Laboratory Has New Information On Deposit Formation

Until recently, there has been very little information on the reaction mechanisms which result in the accumulation of combustion chamber deposits—especially deposits formed by fuels containing tetraethyl lead.

Since nearly all modern automotive fuels contain tetraethyl lead, the Du Pont Petroleum Laboratory undertook a study of the sequence of chemical reactions which occur in engine deposit formation. The study is part of a continuing series of investigations on the mechanisms causing combustion chamber deposits.

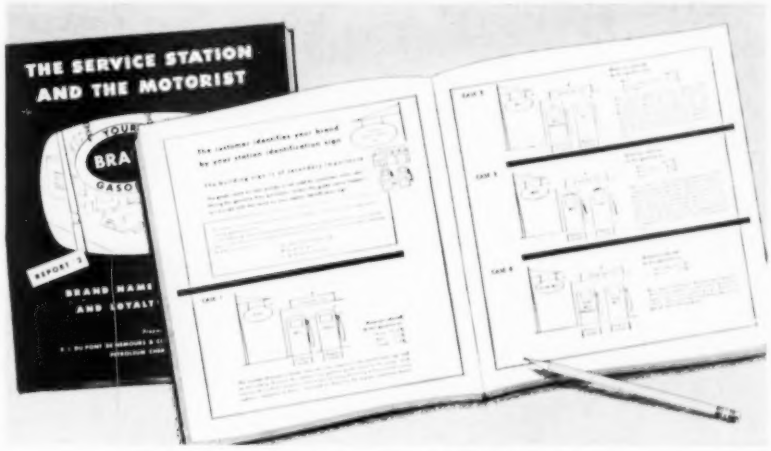
Briefly, the study revealed the following:

1. The course of deposit forming chemical reactions is dependent on the temperature of the combustion chamber walls.
2. Gaseous lead oxide, produced from the decomposition of tetraethyl lead, does not undergo vapor state reactions—except when the gas layer near a clean combustion chamber surface is cool.
3. Solid lead oxide which condenses has a short life as a deposit constituent. It is attacked by acid gases to form simple lead salts or reacts with the simple lead salts in solid state reactions to form complex lead oxysalts.

How Loyal are Service Station Customers to Your Brand Name?

Report No. 2 in Du Pont's survey of consumer buying habits reveals interesting statistics on brand name recognition and loyalty to brand

As an oil company executive, facts about your customers and potential customers are vitally important to you. They are the basis for sound advertising, sales promotion and marketing plans. The Du Pont survey of consumer gasoline buying habits is designed to help give you the facts necessary to perfect such plans.



THE DATA presented in these two pages of Report No. 2 show that a big majority of customers recognize the gasoline sold at a station by the name on the big identification sign erected in front of the station.

The survey itself is based on many thousands of customer interviews and service station observations. As such, it is too voluminous for easy distribution. It is, therefore, being broken down into a series of easy-to-digest reports in booklet form. The first of these reports—issued in March of this year—covered service station selection and loyalty.

WHAT'S IN A NAME?

Report No. 2—"Brand Name Recognition and Loyalty to Brand"—is now ready for distribution to oil company marketing groups. It contains a comprehensive discussion of motorists' loyalty to certain brands and *reasons* for their loyalty.

The tremendous sales power of your brand name is borne out by the survey. For example, the number of motorists loyal to a preferred brand is *greater* than the number loyal to a "usual" service station. And the degree of loyalty in length of time and in quantities of gasoline purchased is also greater. What's more, two out of three people

ADVERTISEMENT—Prepared for the Petroleum Chemicals Division of E. I. du Pont de Nemours & Company (Inc.)

OVER

DU PONT

PETROLEUM CHEMICALS DIVISION NEWS

DU PONT

CONTINUED *Survey Report*

say they buy a preferred brand *exclusively.*

These purchase habits are all documented and graphically illustrated in easy-to-follow form in Report No. 2 on the survey.

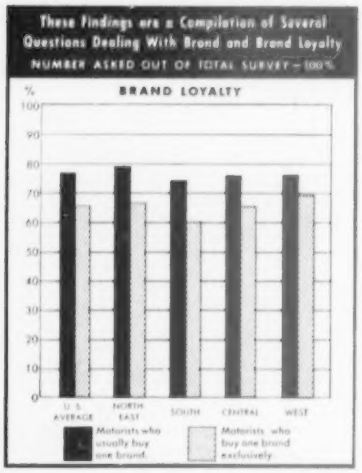
FACT OR BELIEF?

During the customer interviews, however, it was determined that many motorists base their choice of a gasoline brand—or prejudice against it—on *belief* rather than *fact.*

No product is purchased without the buyer's belief that it will satisfy his needs. Because of this, motorists are inclined to answer questions about gasoline brands in terms of brands that are *acceptable* to them.

On the other hand, people "believe," "think" or "have heard" that certain gasoline brands are of poor quality. In the survey 181 brand names and 3 brand groups received some mention as "a brand I would not buy."

A thorough study of replies showed that the reasons for acceptance are



A TYPICAL CHART from survey Report No. 2. It shows that 77% of the motorists in the United States have a favorite brand and usually buy it . . . 66% buy one brand exclusively.

based almost entirely on quality *belief.* And the reasons for quality belief are nearly always connected with car performance. But service, friendship and station location were also mentioned frequently in addition to product quality as reasons for the motorists' purchase selection.

Central District Manager

EARL G. BENNETT, manager of the Du Pont Petroleum Chemicals Division central district, joined the Du Pont Company in 1931.

He was first assigned to the Grasselli Chemicals Department's Grasselli, New Jersey plant. He was later transferred to the Alcohol Division of the Organic Chemicals Department in Wilmington. There he did both technical work at the Jackson Laboratory and sales development work in connection with Du Pont's gasoline and lubricating oil additives.

In 1936, Mr. Bennett was assigned to special work with the Standard Oil Company of Indiana and The Pure Oil Company in Chicago on gasoline stability studies.

In 1939, he was transferred to Chicago in charge of sales in the western area for the Alcohol Division, which then included Du Pont's petroleum chemicals and dyestuff intermediates. He returned to Wilmington in 1943. In 1947, he was appointed Central District Manager, Petroleum Chemicals Division, in Chicago.

EARL G. BENNETT

He was graduated from Clarkson College of Technology in 1931 with a B.S. in chemical engineering. He is a member of the American Chemical Society, the Society of Automotive Engineers and the American Petroleum Institute.

BRAND NAME VS. GRADE NAME

An analysis of consumer buying habits also shows that there is little recognition by the motorist of gasoline "grade" names carried on service station pumps. In fact, motorists nearly always name gasolines according to the names carried on the big station brand identification signs. And the grade name is not a sales factor until after the decision to buy a certain brand is made.

The above are highlights of Report No. 2. More detailed information on grade choice will appear in Report No. 3, which is scheduled for publication sometime this summer.

Findings contained in these reports are based on 3,100 household interviews supplemented by 21,000 observations at 1,193 service stations.

National in scope, the survey is representative of gasoline buying patterns and trends throughout the country. We believe it is the most comprehensive market survey ever undertaken by any segment of the petroleum industry.

LITERATURE AVAILABLE

Here is a partial listing of the bulletins, reports, booklets and aids available to you through any Du Pont Petroleum Chemicals Division district office:

The Service Station and the Motorist — Report No. 1. An authoritative study of the four major gasoline marketing areas showing why motorists select certain service stations . . . and remain loyal to them Serial A-5396

Du Pont Fuel Oil Additive No. 2 — A 12-page bulletin describing this ashless stabilizer and dispersant that prevents clogging of fuel oil screens Serial A-5201

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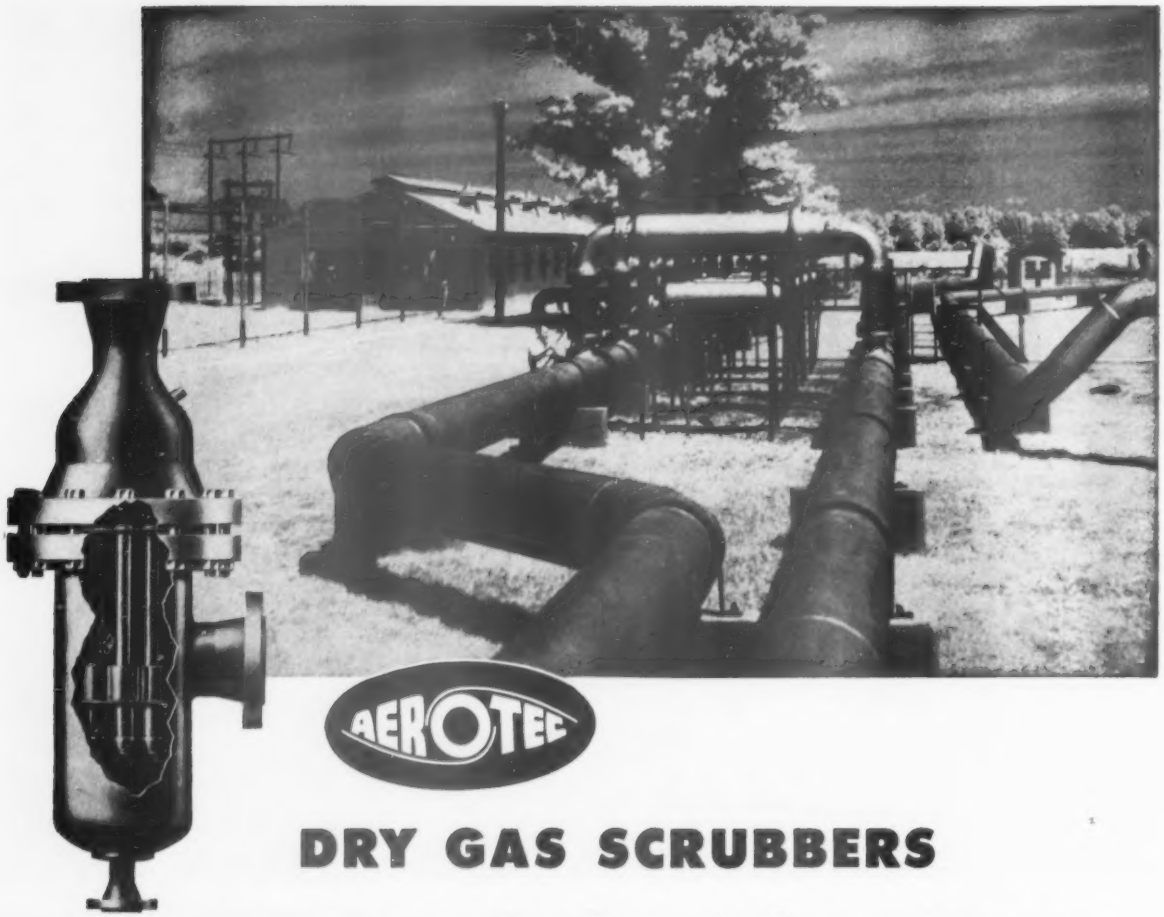

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Dusts and distillates in natural gas put an unnecessary drag on profitable pipeline operation. Aerotec Dry Gas Scrubbers get rid of these damaging impurities with high efficiency, thereby reducing maintenance to a minimum. This is a proven fact in well and pipeline installations across the country.

The Aerotec Scrubber, unlike conventional types, uses no liquid filtering medium. Hence, you eliminate carryover of elements that cause compressor wear. You also avoid other difficulties normally encountered with wet-bath scrubbing methods. The Aerotec units assure clean, *dry* gas that flows freely and saves on repair and maintenance costs.

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Simplified piping permits easy installation of the compact, lightweight Aerotec Dry Gas Scrubber. Standard units up to 100,000,000 SCFD are available, with larger capacity requirements met by manifolding. For technical data and engineering assistance in selecting the Aerotec Scrubber best suited to your gas-cleaning needs, call or write our representatives today.

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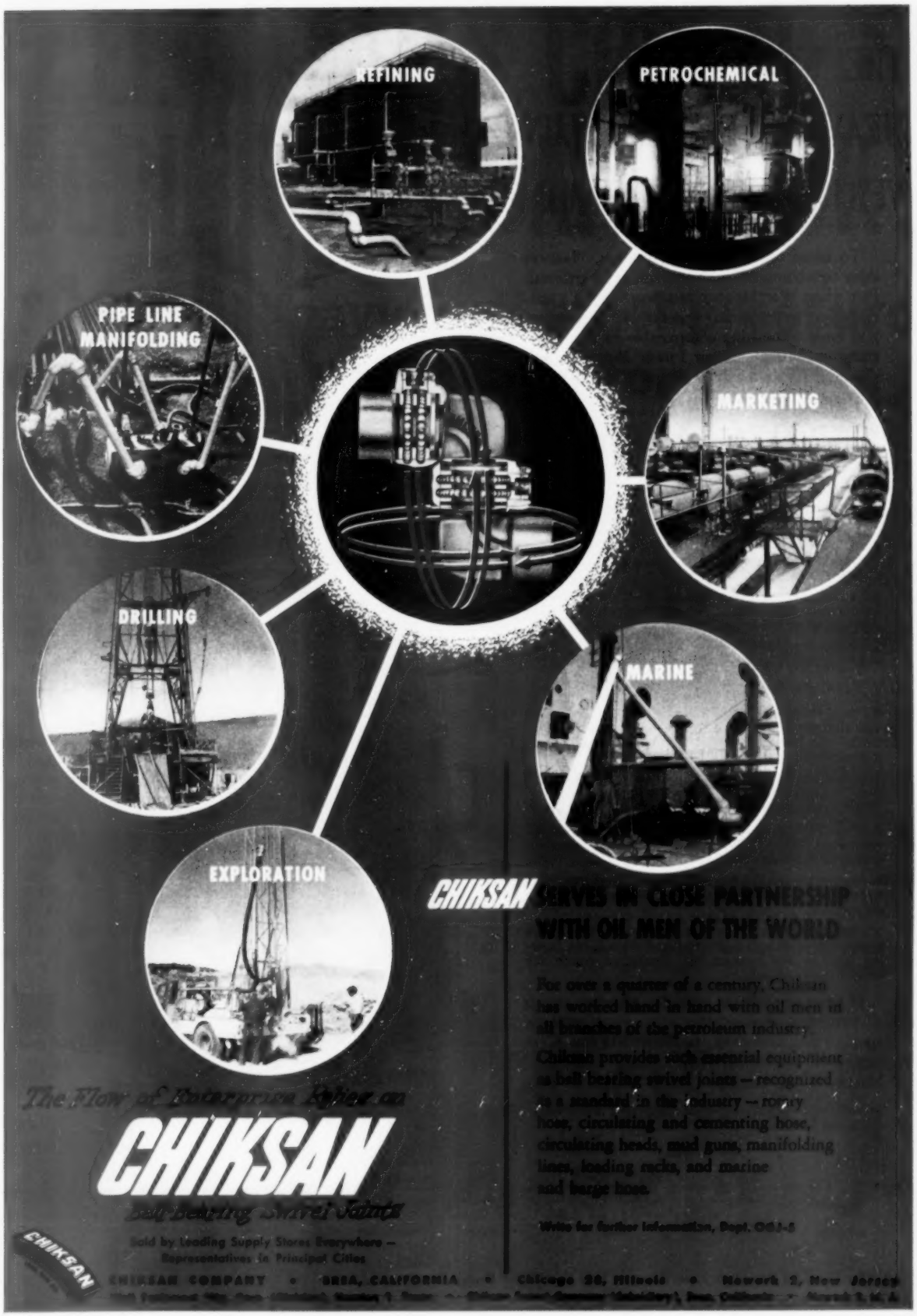
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The inside story of a new power-pump design

THE WORTHINGTON HEAVY-DUTY MULTI-PLUNGER* VERTICAL POWER PUMP

To users of Worthington pumps, "heavy-duty construction" is almost taken for granted. But when Worthington engineers make a special effort to put *extra* ruggedness into a pump, you have something comparable to this Worthington Multi-Plunger Power Pump. Study the features and see for yourself!

ON THE LIQUID END

1. LIQUID CYLINDER—made of forged steel with large fluid passageways bored from solid forgings for maximum strength.

2. STUFFING BOXES—forged-steel barrels, bolted directly to cylinder with extra-deep boxes that permit maximum interchange of plunger sizes.

3. PLUNGERS—made from hardened and ground alloy steel or any other suitable metal. Solid ceramic plungers can be furnished for corrosive applications.

4. VALVE SERVICE—stainless-steel, heat-treated valves and valve seats. High-strength valve springs and bolted valve-hole covers.

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ON THE POWER END

6. CAST-IRON FRAME—totally enclosed, with design that permits torque to be applied near foundation. All bearing surfaces and running parts pressure lubricated.

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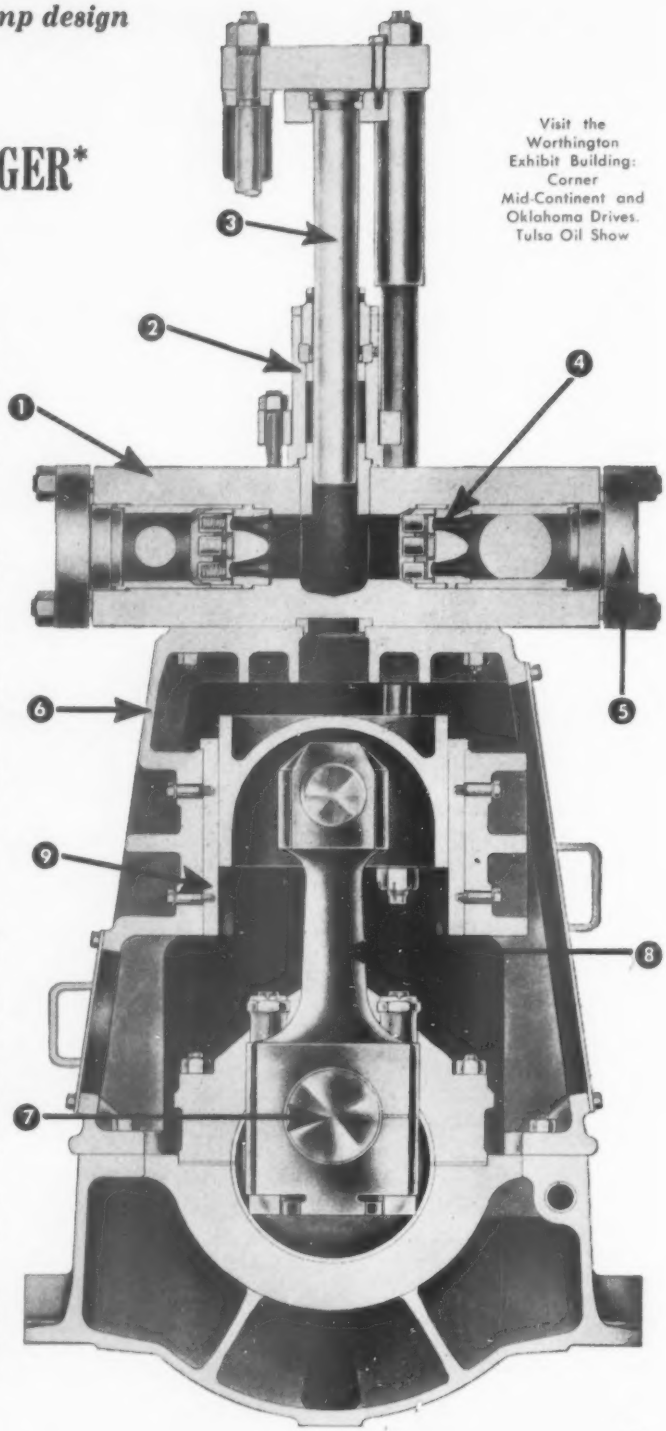
9. CROSSHEAD CRADLE LINERS—solid cast iron with bronze liner shim adjustable to permit careful alignment.

10. BRONZE-SHELL MAIN BEARINGS†—two-piece bronze shell design babbitt-lined with large bearing surface for longest-life. Precision made for trouble free operation.

If your application calls for a power pump of this size, *or any other size*, write, stating specific requirements, to Worthington Corporation, Reciprocating Pump Division, Harrison, New Jersey.

*available in 3, 5 or 7 plunger arrangements (300, 500, 700 hp)
†not shown in drawing



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P.2.2

The World's Broadest Line Assures You the Right Pump for Every Job

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Power Pumps

ELIMINATES COST OF BORING OUT BAR STOCK!

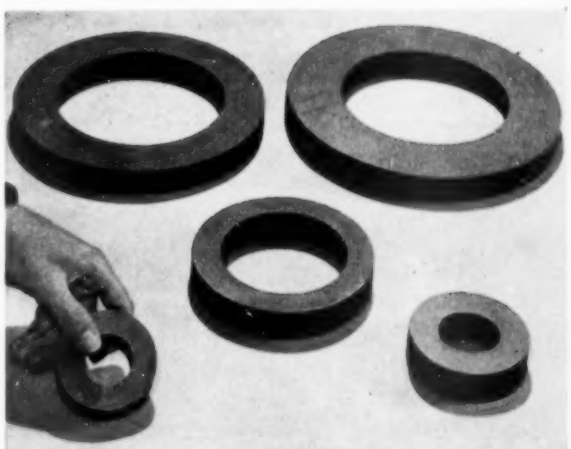
TIMKEN® heavy-wall steel pressure tubing is ready-made for today's higher operating temperatures

IF you need heavier-walled seamless tubing to withstand rising operating temperatures in your chemical plant, steam power plant or petroleum refinery, you can save money by getting Timken® heavy-wall steel pressure tubing. No need to bore out bar stock. With Timken heavy-wall steel pressure tubing the hole's already there. And wall thicknesses are available to withstand today's highest operating temperatures.

You get fine forged quality in Timken heavy-wall steel pressure tubing because the piercing process by which Timken seamless tubing is made is basically a forging operation. Timken steel tubing has a uniform spiral grain flow for greater strength, a refined grain structure which brings out the best in the quality of the metal. And this quality is uniform from bar to bar and heat to heat because of the Timken Company's rigid quality control from melt shop through final tube inspection.

Over 20 years of research and experience makes Timken Company metallurgists the recognized authorities on heavy-wall pressure tubing. They'll help you select—from 24 different analyses in sizes up to 10½" O.D.—the best size and analysis for your particular requirements.

Let our RSQ—Research, Supply, Quality—solve your tube problems. Ask the experts! The Timken Roller Bearing Company, Steel and Tube Division, Canton 6, Ohio. Cable address: "TIMROSCO".



Typical examples of Timken heavy-wall steel pressure tubing.

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Be sure to see the Timken Steel Exhibit, at Booths No. 139, 140, 141, 142 in the Oklahoma Bldg. at the International Petroleum Exposition (May 14 to May 23).

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A NEW, MORE POWERFUL GENERAL MOTORS DIESEL THE **TWIN 6-110!**

- ★ Substantially lower cost
- ★ More power from less space and weight
- ★ Torque converter equipped for oil field use

HERE's General Motors' newest oil field Diesel engine — the power-packed 2-cycle Twin 6-110.

It is 50% more powerful than the famous GM Twin 6-71 that powers more drilling rigs than any other Diesel —yet it has outstanding compactness and light weight. It fits existing compounding case centers.

The new Twin 6-110 gives drillers a wide range of power from a single unit. New dumping type torque converters allow one-engine operation for light load requirements, but the "Twin" power is there when needed.

With Torque Converters, the Twin 6-110 costs 11% less than competitive engine A and 16% less than engine B *without* torque converters in the table below.

	TWIN 6-110	ENGINE A	ENGINE B
Rated H.P.	505	472	460
Continuous H.P.	394	372	375
Width (approx.)	66*	58	66
Length (approx.)	122*	163	92
Height (approx.)	83*	85	108
Weight (approx.)	12,500*	14,080	21,000

*With Torque Converters. All other figures without Torque Converters.

Get the complete story on General Motors' new Twin 6-110 Diesel from your distributor or supply company, or write us.

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It pays to standardize on

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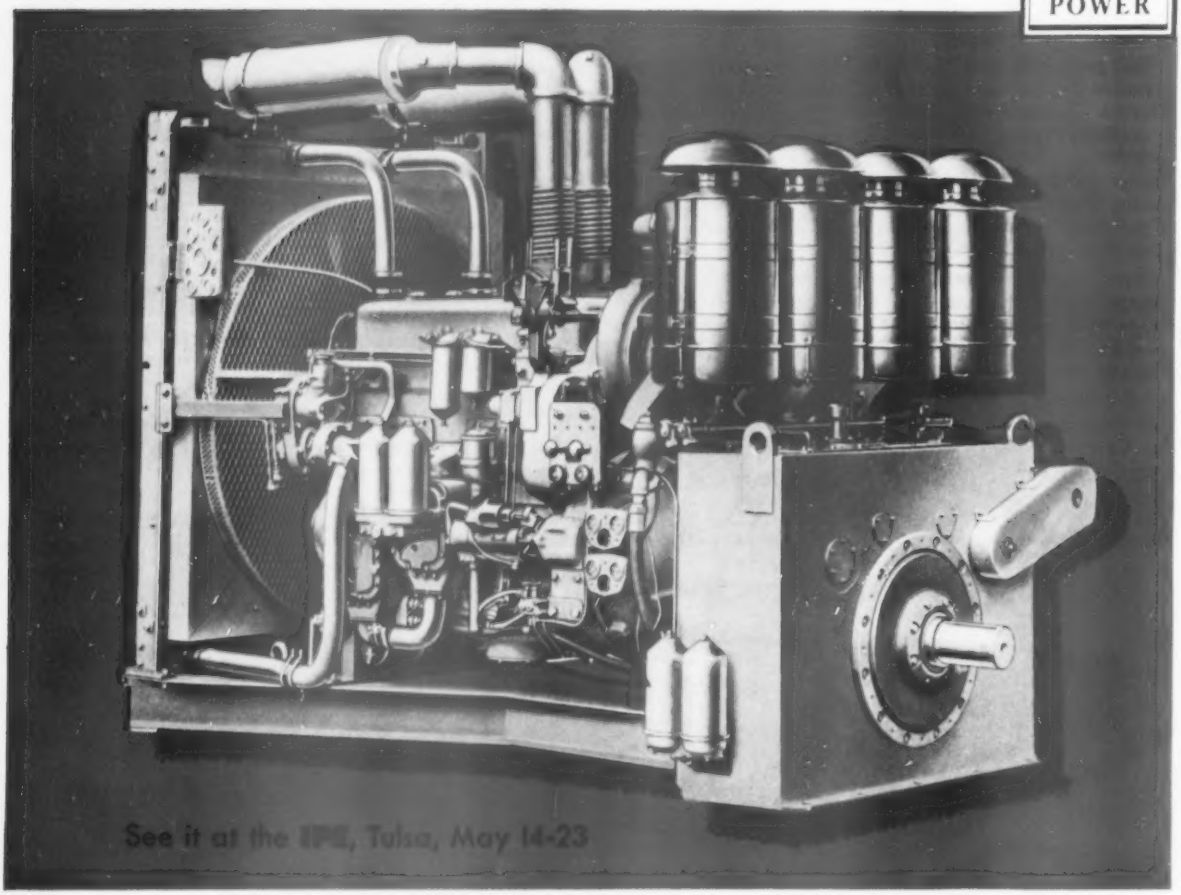
GENERAL MOTORS
DIESEL POWER



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To get the most from your microwave investment, check the record for downright dependability—and you'll specify RCA MICROWAVE.

For example, check the operating records of RCA MICROWAVE systems over the years. Check RCA's long history of successful operation through every kind of weather. Or check the numerous RCA installations that are now providing continuity of service in many applications. RCA can offer you a long working record of dependability.

For complete Service, check RCA's survey, construction, and installation facilities. They're complete single-source, single-responsibility service.

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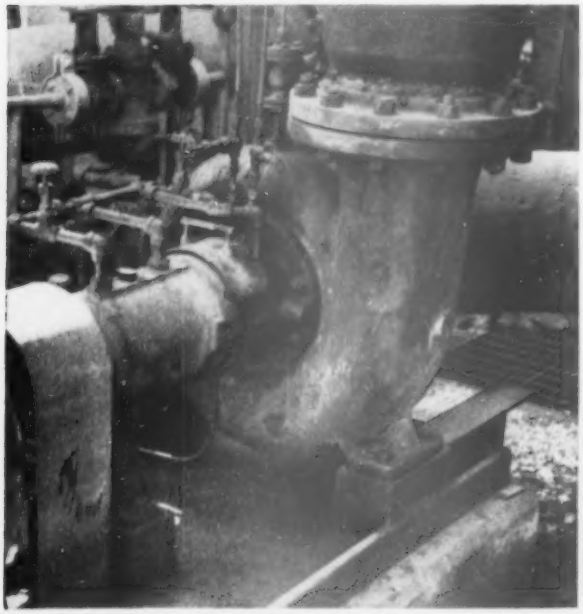
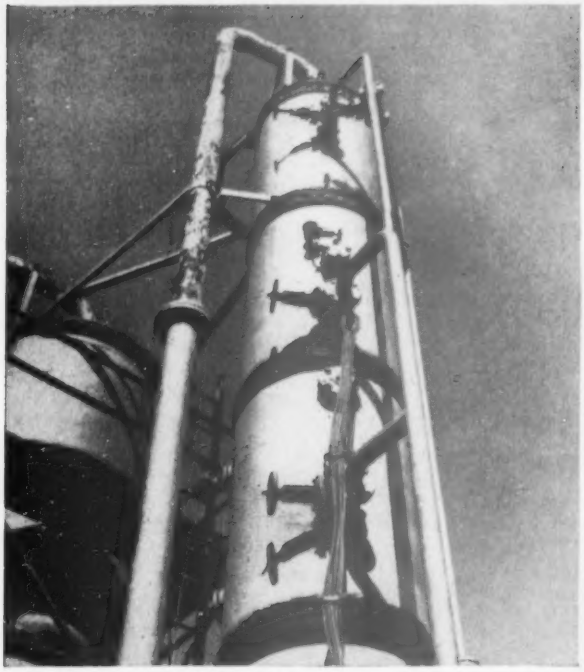
THESE TEN-YEAR-OLD PUMPS for circulating organic acids are built entirely of Stainless Steel. In spite of their long service, they are still in very good condition.



STAINLESS STEEL also resists corrosion in the column and kettle of this batch still kettle for distillation of esters. The equipment, still in good condition, has been in use three years.

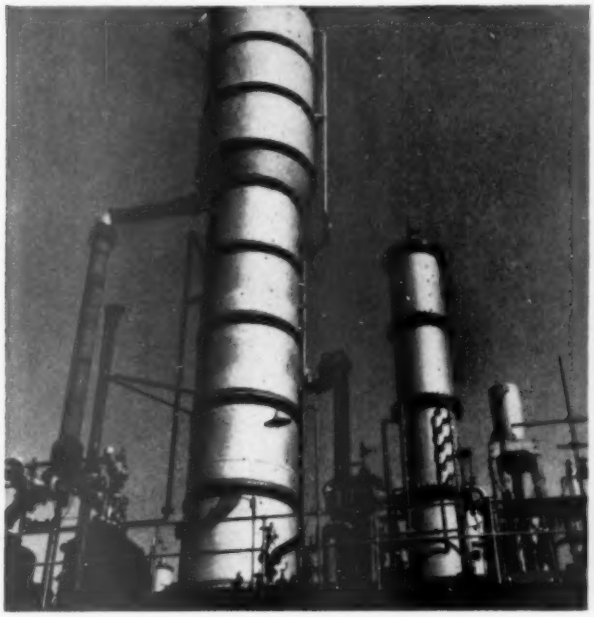
For corrosion resistance



STAINLESS STEEL STRIPPING MILL is used for removing water from organic liquids. It is four years old and still ready for more service.

ALL PARTS of this automatic bagging machine in contact with hot resin are Stainless Steel. Stainless is used to prevent contamination of vinyl resin.

VESSEL AND ALL INTERNALS of this still for distillation of acetic acid are Stainless Steel for resistance to corrosion. The Stainless is in good condition after three to four years' service.



OLIVER LEAF FILTER, used to remove salt from an organic base, has shell, leaves and valves of Stainless Steel. In service between four and five years, it is in excellent condition.

in petro-chemical operations

THIS MAJOR TEXAS PRODUCER SELECTS

STAINLESS STEEL

● At its big Gulf Coast operation, this producer of petro-chemicals makes extensive use of Stainless Steel in many types of processing equipment.

In some of these applications, Stainless Steel's resistance to corrosion led to its selection. In others, the absence of product contamination that Stainless assures was the determining factor.

These are only two of the important benefits of Stainless Steel in chemical processing equipment. Others include ease of cleaning, elimination of downtime for replacement, excellent performance in certain high temperature operations or when high pressures are involved.

It will pay you to investigate the use of Stainless Steel in your plant wherever you need these benefits. And if you want the finest performance, be sure you use perfected, service-tested U·S·S Stainless Steel.

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SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

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UNITED STATES STEEL

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Fluor played a prominent role in the expansion program now being completed at Socony-Vacuum's Paulsboro refinery, one of the largest on the East Coast. Fluor's "turn-key contract" called for the engineering and erection of the 15,000 B/D Thermofor Cat-Cracker – similar to the one Fluor built for Socony at Augusta, Kansas, two years ago – plus the feed preparation system, fractionation units, gasoline plant, piping and many of the offsite facilities – all on schedule and within the budget. Fluor's ability to design, engineer and build complete plants and facilities for the petroleum, gas, chemical, power and heavy industries has been ably demonstrated on many previous occasions.

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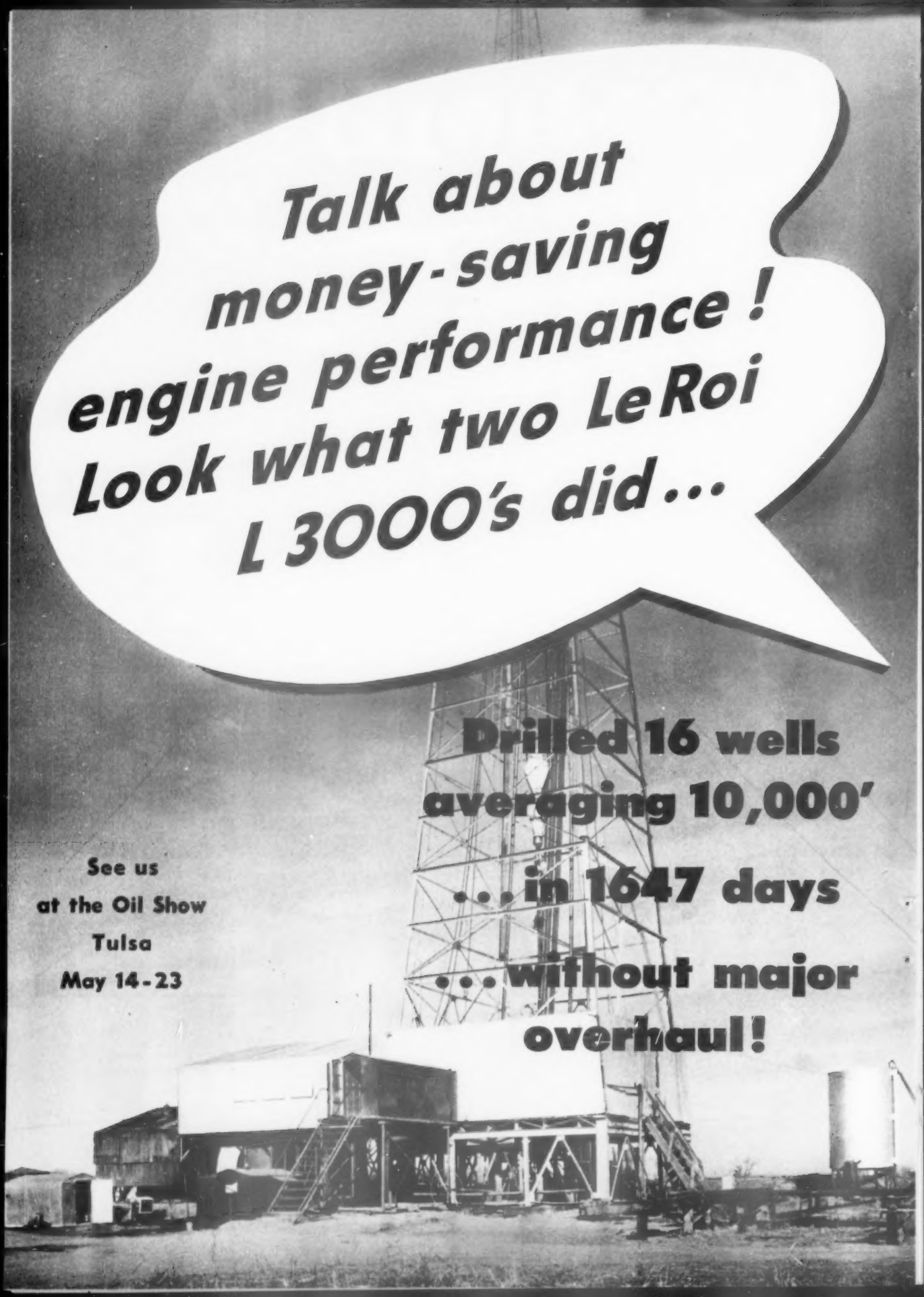
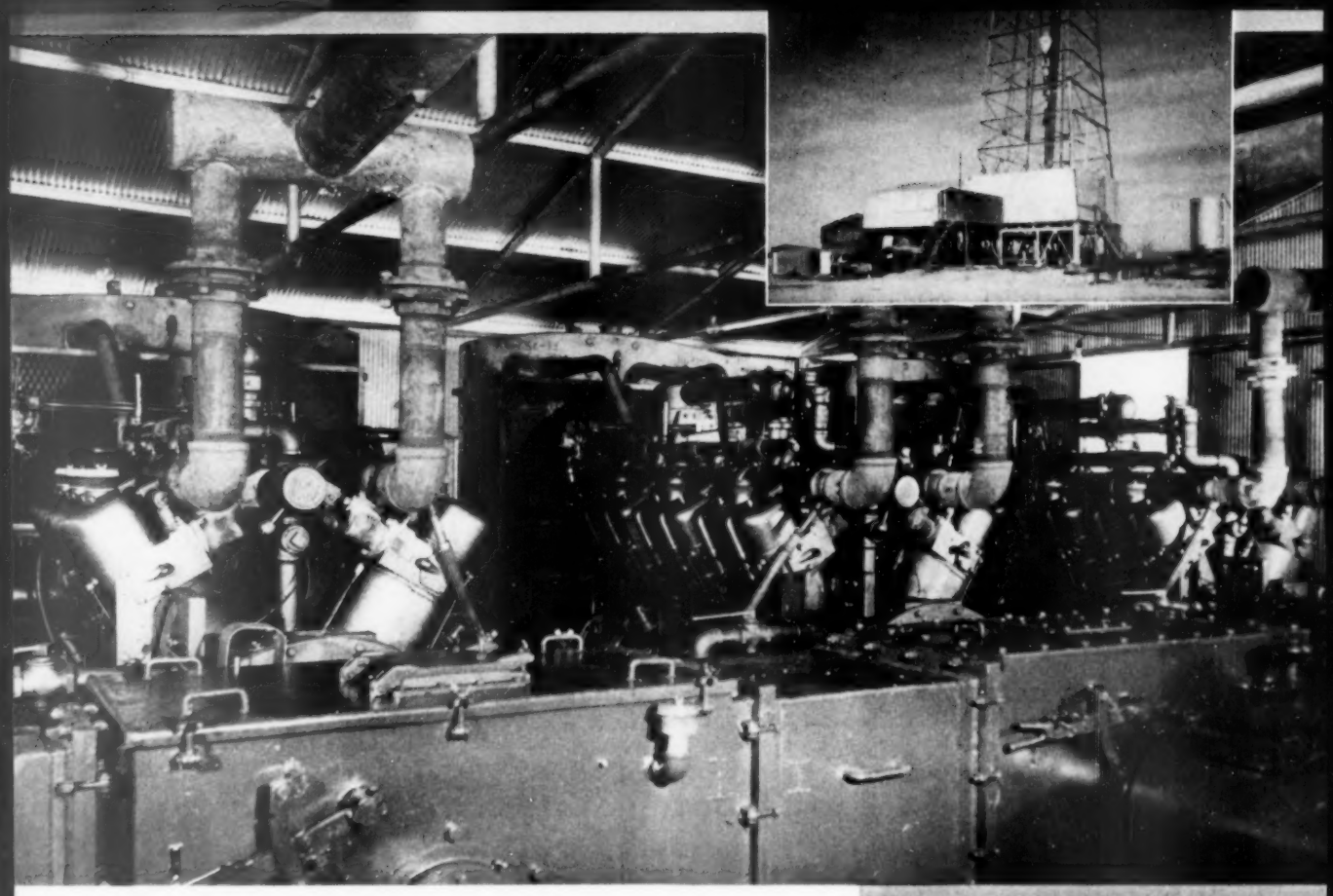
COLUMBIAN STEEL TANK CO., P. O. Box 4048-J, Kansas City, Mo.


Talk about money-saving engine performance! Look what two LeRoi L 3000's did...
Drilled 16 wells averaging 10,000'
... in 1647 days
... without major overhaul!
See us at the Oil Show Tulsa May 14-23



ALMOST 5 years of drilling service — with but very little repair work and only an occasional top overhaul! That's real performance — the kind of performance two Le Roi L3000's gave Trigg Drilling Company of Oklahoma City.

And — they delivered the power, the fast acceleration, the vibration-free operation Le Roi engines have long been famous for. Thanks to this exceptional power and smoothness, they handled 15,000 feet of 4½" drill pipe easily, according to Mr. Clay Trigg.

It's no wonder Trigg Drilling Company selected Le Roi to power the three-engine rig shown above. It's no wonder they now have a total of seven L3000's on their three rigs and an additional two Le Roi H2000's.

Reports from all fields show that you can count on Le Roi for dependability and economy under continuous loads. You can count on Le Roi for lugging power at slow speeds. You can count on Le Roi for plenty of reserve power to help your crew out of the tight spots.

Enjoy these advantages — insist on Le Roi power on original equipment and as replacement engines. Ask your rig manufacturer, supply house, or Le Roi distributor to show you Le Roi engines at work.

LE ROI

LE ROI COMPANY

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Service as Near as Your Telephone

Complete parts stocks . . . Skilled mechanics on 24-hour call . . . Unexcelled overhaul facilities

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Southern Engine and Pump Company — Houston, Kilgore, Edinburg, Dallas, San Antonio, Corpus Christi, Texas, and Lafayette, Houma, Louisiana.

North & West Texas, New Mexico
General Machine & Supply Co. — Odessa, Snyder, Texas.
Nortex Engine & Equipment Co.—Wichita Falls, Texas.

Kansas
Carson Machine and Supply Co.—Great Bend

Illinois — Western Kentucky
Western Machinery & Engine Company — Centralia, Illinois and St. Louis, Missouri.

Michigan
Hafer Engine Service — Reed City

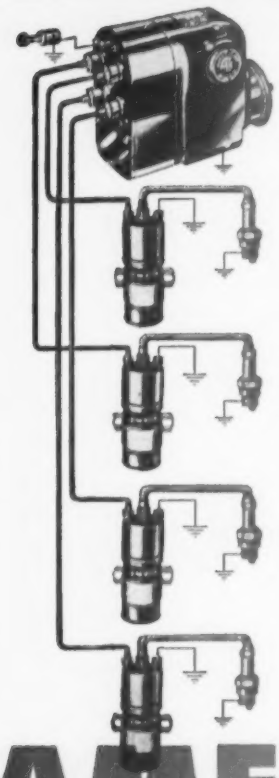
Rocky Mountain Area
Gehring Equipment Co. — Casper, Wyoming, Rangeley, Col.

Mississippi, Arkansas and Northern Louisiana
Ingersoll Corporation — Shreveport, Louisiana, Jackson, Mississippi, El Dorado, Arkansas

West Coast
Le Roi-Rix Machinery Co. — Los Angeles, Long Beach and Bakersfield, Calif.

Appalachian Area
P. C. McKenzie Co., Pittsburgh, Bradford.

Canada
Lucey Export Ltd. — Calgary, Edmonton, Alberta.



for Large Bore, Stationary Gas Engines

AMERICAN BOSCH

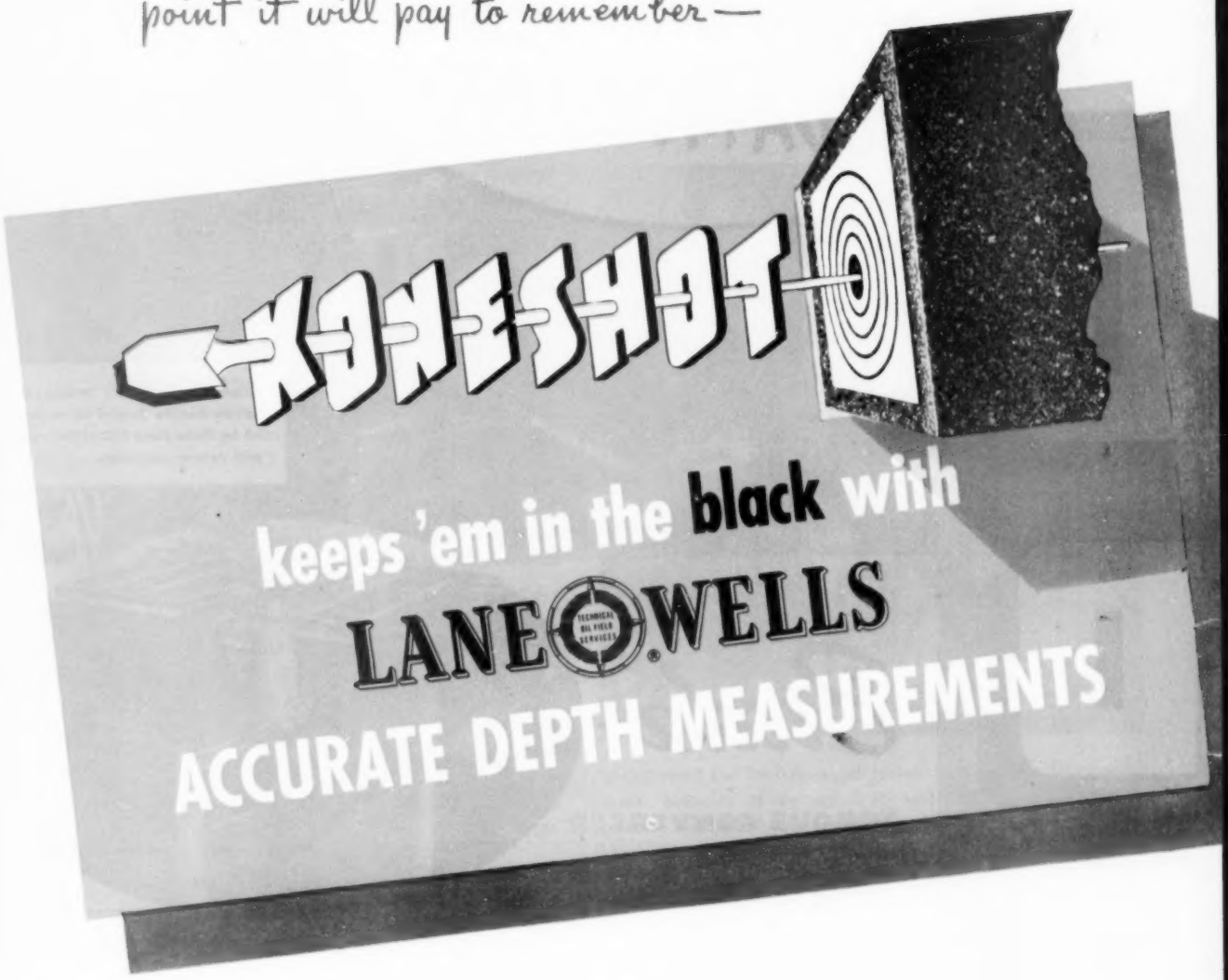
LOW TENSION MAGNETO IGNITION SYSTEM

The System comprises the American Bosch MRB Low Tension, shielded Magneto and individual High Tension Ignition Transformers mounted at each engine cylinder. (See 4 cyl. installation diagram at left.) Low tension current, generated in the Magneto, is distributed through low tension leads to the Transformers. Here, the electrical energy is stepped-up to high voltage and conducted to the spark plugs by short cables—shielded if desired. The rugged, heavy-duty, high tension Transformers (as illustrated above) are available with or without shielding for use in the American Bosch System or other low tension systems employing magneto or battery ignition.

Energy losses and corona effects which occur with long high tension cables are eliminated. The possibility of fire and explosion hazard is minimized where engines operate in combustible vapors . . . radio and TV interference may be greatly reduced by complete shielding. These important advantages, combined with the outstanding electrical and mechanical features of the American Bosch Low Tension Magneto, offer maximum spark efficiency for engines operating under severest conditions. Write for the facts and we'll show you how you can get this peak performance and safer, continuous service with your present equipment. American Bosch Corporation, Springfield 7, Mass.

AMERICAN BOSCH

When you plan for
shaped-charge perforating here's a
point it will pay to remember—



P.S. Thoroughly-experienced
crews give you fast, safe service
from Lane-Wells 69 branches.

Tomorrow's Tools - Today!

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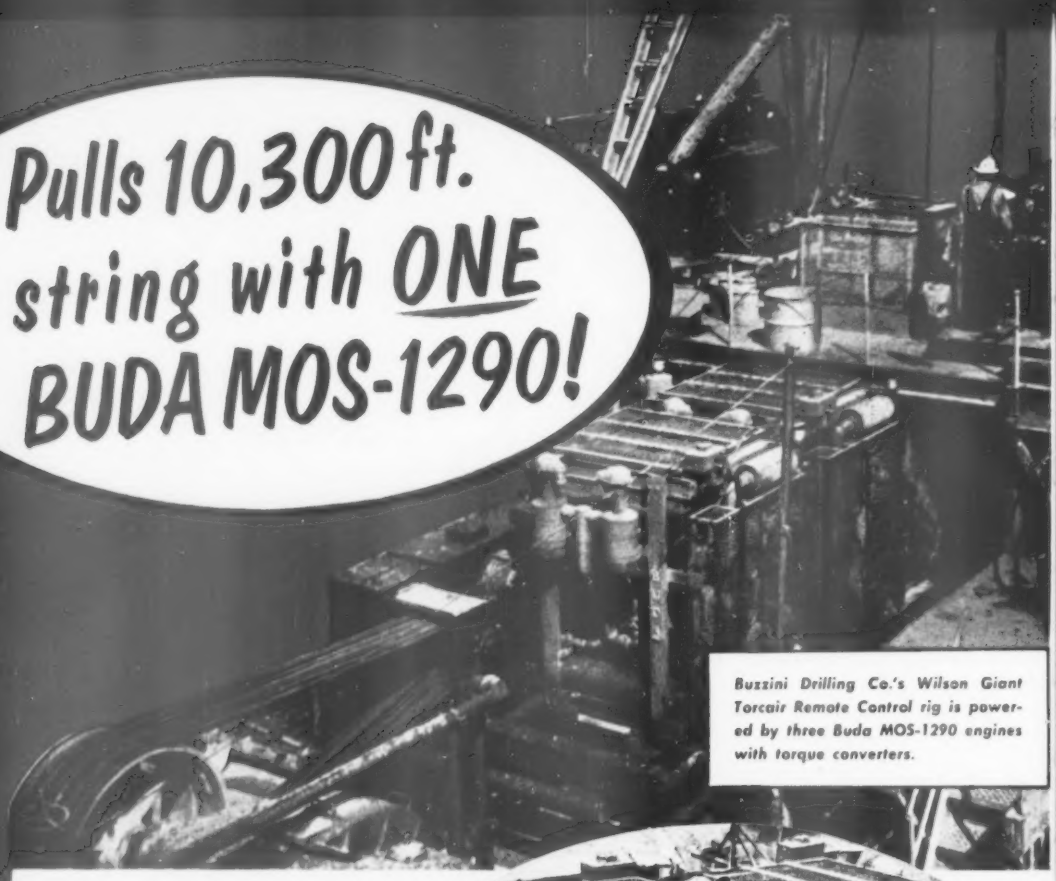
LOS ANGELES • HOUSTON • OKLAHOMA CITY • LANE-WELLS CANADIAN CO. IN CANADA • PETRO-TECH SERVICE CO. IN VENEZUELA

AK-605

BUDA

Pulls 10,300 ft. string with ONE BUDA MOS-1290!



Buzzini Drilling Co.'s Wilson Giant Torcair Remote Control rig is powered by three Buda MOS-1290 engines with torque converters.

Close-up of the Buzzini rig's two compounded Buda MOS-1290 pump and drawworks engines. Note top mounted radiators.

Buda-

TORQUE CONVERTER

COMBINATION PROVIDES

Big Power FOR BUZZINI RIG

Buzzini Drilling Company's No. 6 rig, on location in Zavada County, Texas, was down to 10,300 ft. in a diamond coring operation. One of the Buda MOS-1290 engines powering the drawworks developed minor valve trouble. Rather than risk possible damage to the engine, it was decided to come out of the hole with the remaining Buda. Starting off the bottom, it was necesary to pull 250,000 lbs. to get through a tight spot, but the single Buda Engine Torque Converter combination pulled the pipe without trouble in less than five hours.

Performance like this is why Budas are called "drillers' engines" . . . engines built to deliver the "big power" and extra stamina that pays dividends in the oilfields. Whatever your requirement — high speed engines for torque converter combinations or medium speed, heavy duty engines — if it's oilfield power . . . BUDA HAS IT!

Ask your Buda Oilfield Distributor for details. The Buda Company, Harvey, Ill.

Visit with us at our Exhibit—International Petroleum Exposition, Space "M"—Oklahoma Drive and Arcade Way

WHEREVER THERE'S OIL, THERE'S BUDA ENGINES, PARTS AND SERVICE

BUDA Oilfield Distributors are located in Dallas • Tulsa • Los Angeles • Houston • Oklahoma City • Shreveport • Amarillo • Midland • Davenport • Bakersfield • Fresno • Fargo • Grand Rapids • Long Beach • Kalispell • Mt. Clemens, Mich. • Boise • Odessa • Casper • Denver • Elizabethport • New York City, Export, and in Canada at Calgary and Edmonton

BO-28

Arquad® solves costly water flood problems

Armour chemical reduces corrosion rate up to 99% and controls bacteria and algae growth

Many water flood systems, pipe lines and brine disposal operations are plagued by corrosion, bacteria and algae growth. Frequent and costly shut-downs are the result. A new Armour chemical—Arquad S-2C—ends these problems economically and effectively. A combination of quaternary ammonium compounds, Arquad S-2C is a potent germicide which plates out as a protective barrier on metal surfaces in contact with corrosive fluids. As a result three major problems—control of algae growth, control of bacteria and control of corrosion—are eliminated by one Armour chemical. Cost of combating these problems with Arquad S-2C is about one-half the average of similar treatments using competitive inhibitors and bactericides.

Control of Corrosion, Bacteria-Algae Growth

In a recent California water flood, laboratory and field tests reported an appreciable corrosion rate, presence of black waters and visible slime build-up in the systems. After the introduction of Arquad S-2C at a rate of 6-10 ppm, the waters cleared, algae was completely destroyed and corrosion reduced to practically nothing.

Results from another flood operation in Eastern Oklahoma show the use of Arquad S-2C reduced the rate of corrosion 99.5% and completely cleared the turbid, red waters which resulted from bacterial-algae contamination.

Corrosion Inhibition and Acid Waters

In secondary recovery water floods, acid waters are often preferred to improve injection rates and open the formation through dissolution of corrosion products. The severe corrosive effect of acid waters on metal equipment can be controlled by Arquad S-2C to make this technique more efficient and reduce down-time.

Technical Bulletin E-6 covers this problem of control

of corrosion and bacteria-algae growth in water-flooding operations. Samples of Arquad S-2C and this booklet—free, of course—will show you how profitable and economical corrosion and bacteria control can be. Send the coupon today for both the booklet and a sample for either laboratory or field testing. Prices will be quoted on request.

"Arquad" is a registered trade name of Armour and Company

Mail This Coupon Today!

Armour and Company
1355 West 31st Street, Chicago 9, Illinois

Please send me the following:

☐ Tech. Bulletin E-6 ☐ Sample of Arquad S-2C

Name .....

Title .....

Firm .....

Address .....

City ..... *Zone* ..... *State* .....

ARMOUR CHEMICAL DIVISION

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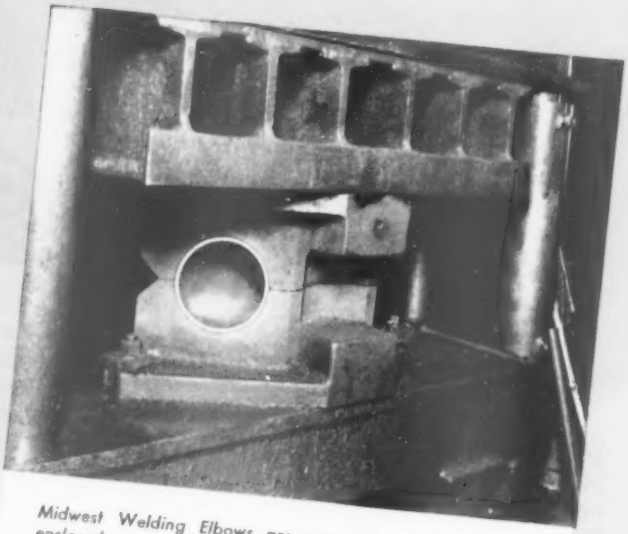
Held to CLOSE LIMITS

The child cooped in his playpen is held to close limits for his own safety and health. Midwest Welding Fittings are held to close limits to save you time and money on your welded piping. Because of their exceptional dimensional accuracy and uniformity (see below), all pipe can be cut in advance according to drawings with assurance of accurate fit. Welders do not have to spend costly time struggling to line up fittings and pipe. Welding proceeds rapidly and economically with no time-wasting compensation for inaccuracies. It will pay you to specify "Midwest" the next time you order welding fittings.



Midwest Welding Elbows are accurately sized in totally enclosed compression dies that exactly control metal distribution throughout fitting. The result is true circular cross section and accurate radius, included arc, and tangents.

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(Formerly Midwest Piping & Supply Co., Inc.
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Sales Offices:
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MIDWEST WELDING FITTINGS

6108

MIDWEST WELDING FITTINGS Improve Piping Design and Reduce Costs

BIG NEWS at the TULSA INTERNATIONAL PETROLEUM EXPOSITION

See the

Bendix Ultra-Viscoson

the instrument that

- measures
- records
- controls

VISCOSITY

- instantaneously
- continuously
- automatically

Simple Flexible Reliable

No moving parts

Hermetically sealed probe

Operates in temperatures from −109° to 650°F. and pressures of 1000 p.s.i. (special units available for higher pressures)

Measurements made in milliseconds

Remote operation

Probe can be permanently installed

Easily combined with remote recorder and automatic controls

Multi-probe systems available if desired

Now viscosity can be measured directly and continuously in industrial processes, by the Bendix Ultra-Viscoson. No longer is it necessary to measure viscosity by tedious sampling or through less satisfactory "secondary" characteristics, such as temperatures for lube oils, drilling muds, asphalt, tars, plastics, etc.

Combining the science of ultrasonics and electronics in a simple, reliable equipment, the Ultra-Viscoson provides viscosity measurements directly with speed and accuracy. Simply install the small rugged probe in pipeline, kettle, pressure vessel, fractionating tower or tank, and you get an instantaneous and continuous check of viscosity as the process progresses. An associated recorder-controller readily provides automatic control of viscosity for continuous processes. Over the past two years, several hundred Ultra-Viscosons have brought real savings in many different industrial applications. If you are interested in increased profits through instantaneous and continuous viscosity measurement and control, be sure to see the Bendix Ultra-Viscoson in operation at the Tulsa International Petroleum Exposition . . .

Bendix Booth 207, Oklahoma Building

For full particulars write to

CINCINNATI DIVISION OF
BENDIX AVIATION CORPORATION
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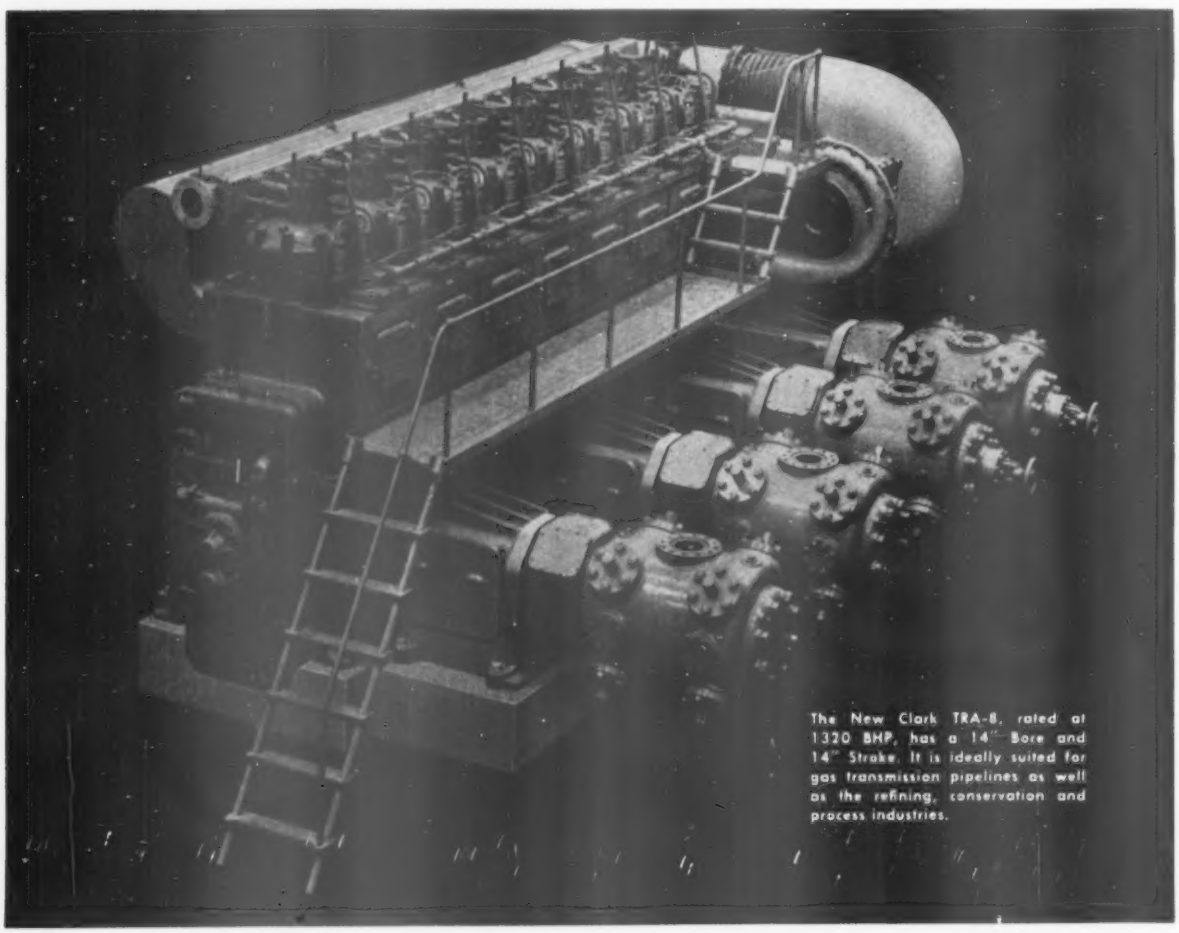
ITS HERE! a

The NEW Clark 2-Cycle



The New Clark TRA-8, rated at 1320 BHP, has a 14" Bore and 14" Stroke. It is ideally suited for gas transmission pipelines as well as the refining, conservation and process industries.

Clark Continues to Set the Pace in Compressor Progress

revolutionary compressor development!

Turbo-Charged "Right Angle"

It's here — after seven years of intensive development. Clark revolutionizes compressor design with the first 2-Cycle Turbo-Charged Gas Engine Driven Compressor . . . the TRA. Another Clark first! A precedent-shattering development that makes possible —

50% MORE POWER
Developing 1320 bhp, the TRA-8 delivers 50% more power than any comparable compressor, with *no* encroachment on overload carrying ability.

SHARPLY REDUCED FUEL CONSUMPTION
The TRA is conservatively rated *and guaranteed* to burn substantially less fuel than *any* gas engine driven compressor now built.

25% LESS COOLING WATER LOAD
(Including scavenging air intercooler load.) Vast amounts of waste heat are recovered from the exhaust gases by the Clark Turbo-Charger and are converted to useful work.

FLAT FUEL CONSUMPTION CURVE
Fuel consumption remains practically constant over a wide range of load conditions.

QUIET
Energy goes into power, rather than noise. Much quieter than a conventional gas engine driven compressor. No exhaust pulsations.

UNPRECEDENTED RUGGEDNESS
Tremendous stamina, unapproached by any other compressor design. Conservative BMEP rating.

COMPACT IN-LINE DESIGN
Very economical of floorspace, foundations and building requirements, yet highly accessible.

•

The Clark TLA, with 17″ bore and 19″ stroke, is also available when units of even greater horsepower than the TRA are required. For complete engineering details — the facts behind this revolutionary compressor development — see your nearest Clark representative and write for Bulletin 130.

CLARK BROS. CO. • OLEAN, N. Y.

DIVISION OF DRESSER OPERATIONS, INC.

SALES OFFICES IN PRINCIPAL CITIES THROUGHOUT THE WORLD

CLARK compressors

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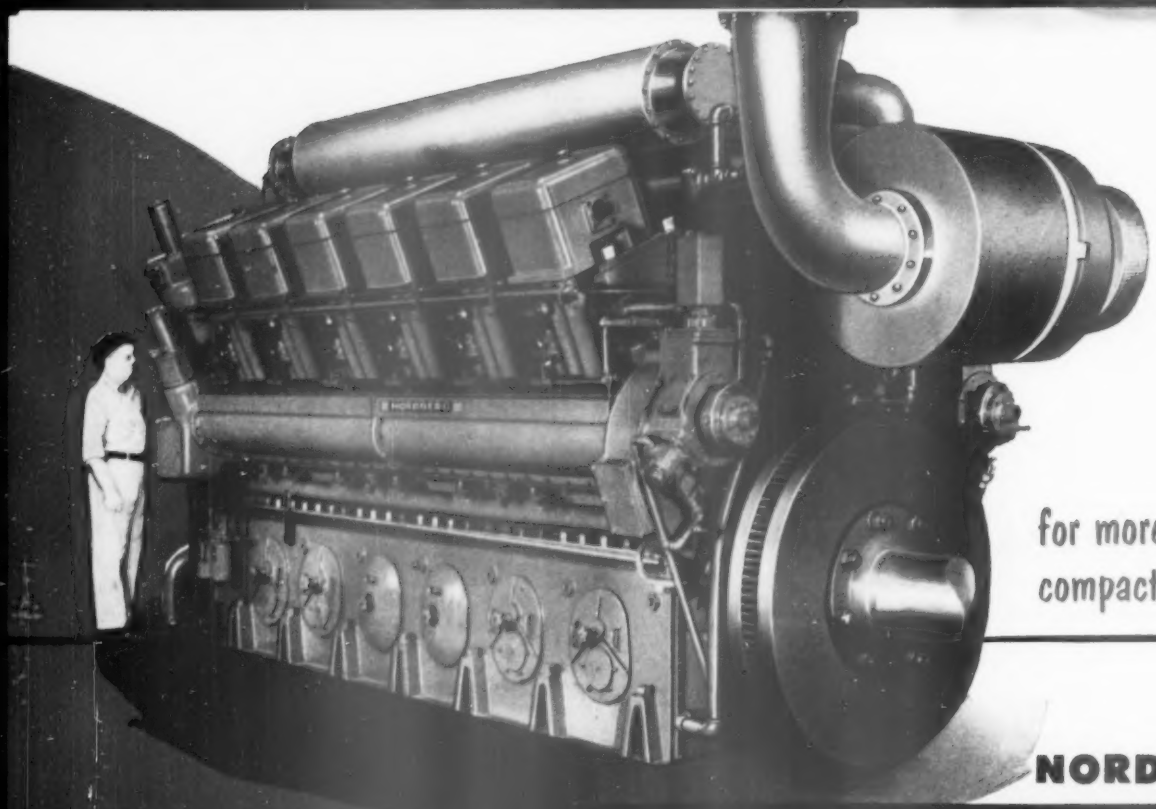

for more economical compact power . . .

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FOUR-CYCLE V-TYPE ENGINES

- COMPACT
- HIGH THERMAL EFFICIENCY
- ECONOMICAL
- DEPENDABLE
- RUGGED CONSTRUCTION
- WIDE HORSEPOWER AND SPEED RANGE

. . . another important Nordberg advancement in the design and development of more efficient engines

Here is the Nordberg four-cycle SUPAIRTHERMAL V-Type engine . . . designed and built for continuous low cost operation for a wide range of stationary and marine power applications. This engine is available in 12 or 16 cylinders of 13″ bore in Diesel, Duafuel or Spark-Fired Gas types from 2400 to 4260 hp at 450 to 600 rpm.

The design of this V-Type engine incorporates all tested and proved performance features of Nordberg 13″ bore in-line SUPAIRTHERMAL engines. The high thermal efficiency of the SUPAIRTHERMAL engine is made possible by variable inlet valve timing control . . *an exclusive patented Nordberg feature.*

*Trademark

For full details write for BULLETIN 197.

P-507

NORDBERG MFG. CO., Milwaukee, Wisconsin

Builders of America's largest line of heavy-duty Diesel engines from 10 to over 10,000 horsepower

NORDBERG

DIESEL • DUAFUEL® AND SPARK-FIRED GAS ENGINES

INDUSTRY'S ALL-TIME FAVORITE FOR LONG RANGE *Economy*

JENKINS
Fig. 106-A
Renewable Composition Disc

BRONZE
GLOBE VALVE

150 lbs. Steam
200 lbs. O.W.G.

Take a Jenkins Fig. 106-A apart. It's easy to see why it is industry's all-time favorite. Note the liberal dimensions of body and bonnet casting — the heavy, manganese bronze spindle, with more strong threads in contact with the bonnet, regardless of spindle position. See how the slip-on, stay-on disc holder fully protects the edge of the disc, prevents creeping, flaking, or cracking.

Every part, from perfect grip, heatproof handwheel to pipe ends, reflects the designing skill of Jenkins valve *specialists.* There's a good reason. Jenkins Bros. introduced the *first* renewable composition disc valve, — is today the only manufacturer of both valves *and* discs.

Fig. 106-A not only looks better — it proves out better in performance. In any comparison, its long life, low upkeep record has never been surpassed. That is the true measure of valve cost — and it is the reason why industry's shrewdest buyers will settle for nothing less than Fig. 106-A quality.

JENKINS VALVES

LOOK FOR THE DIAMOND MARK

SINCE 1864 TRADE JENKINS MARK

Jenkins Bros.

GET THIS FOLDER — Gives details of Fig. 106-A design, and "family" interchangeability. Ask your Jenkins Distributor for Form 189-A, or write Jenkins Bros., 100 Park Ave., New York 17.

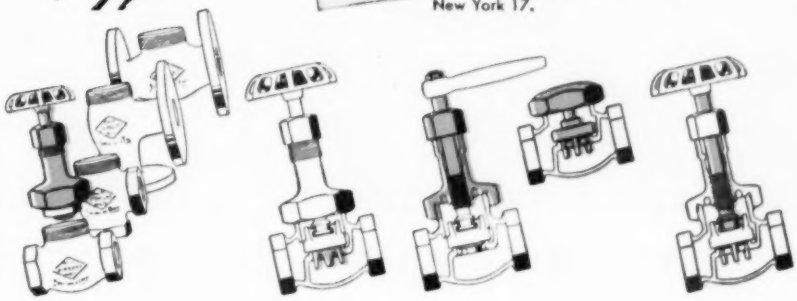
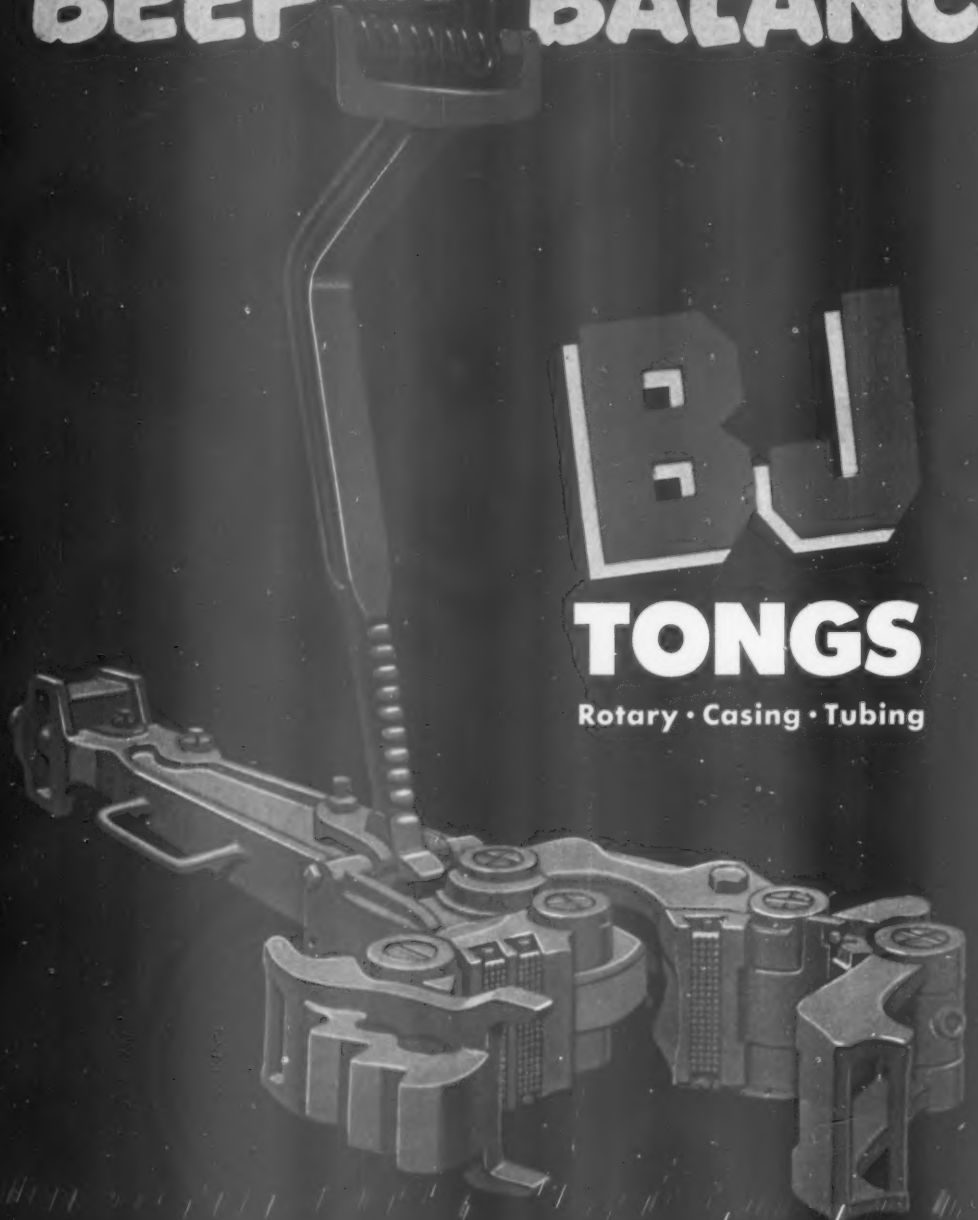


Fig. 106-A "Family" Interchangeability meets 90% of your valve needs with a small inventory of parts. Start with the standard Fig. 106-A. Trimming is interchangeable in Globe or Angle body, screwed or flanged. With a few parts, quickly-assembled combinations provide a Lift Check, a Spring-loaded Check, and valves for Stop and Check, Quick-opening, or Throttling service.

The right combination of BEEF and BALANCE



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BJ MEANS ENGINEERED OIL TOOLS

BJ PB

Byron Jackson Co. Since 1872

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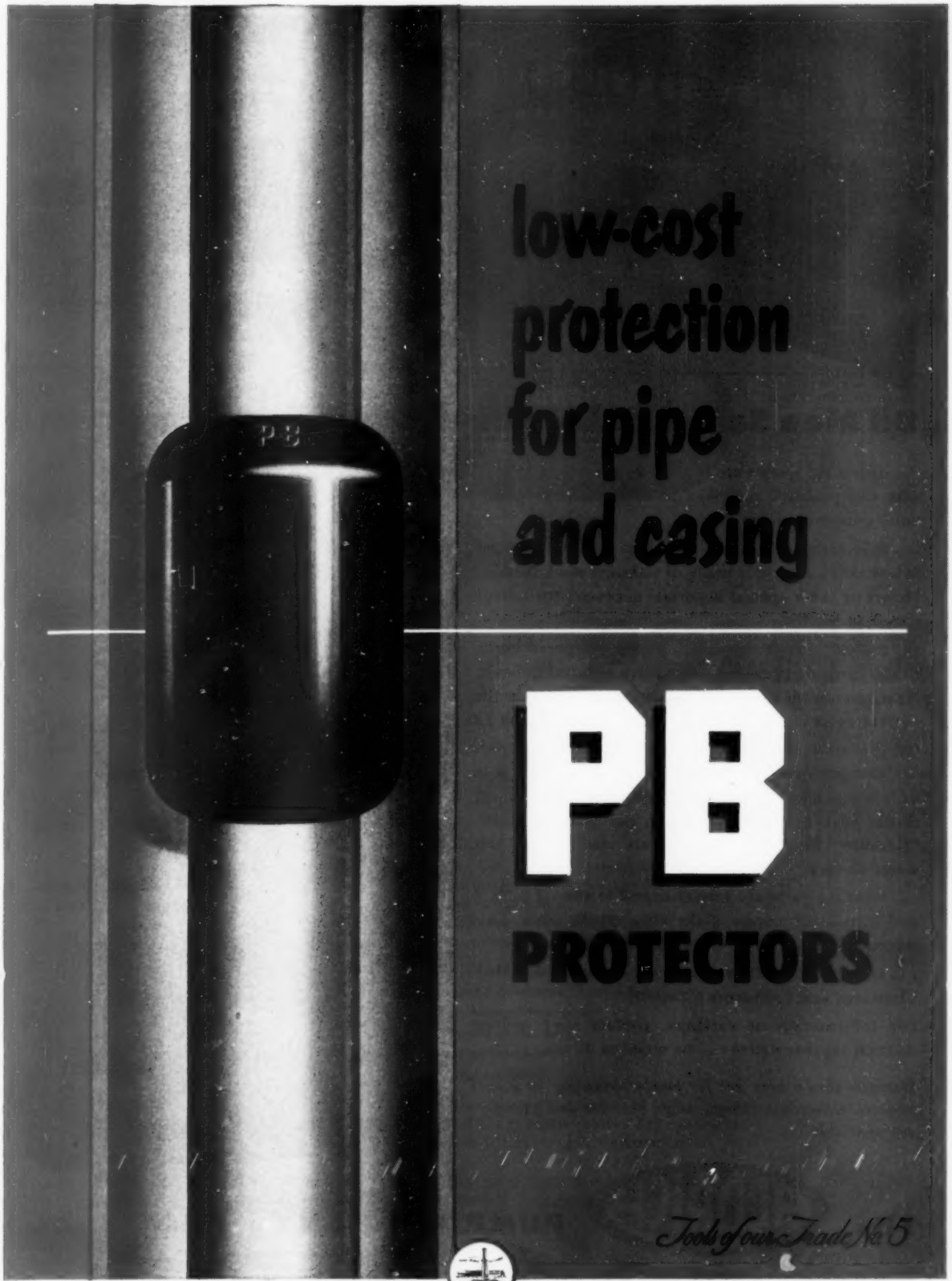

PB OIL FIELD RUBBER SPECIALTIES

BJ PB

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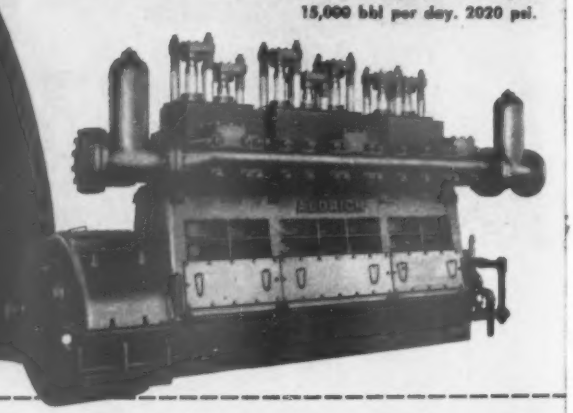
FOR THESE SERVICES:

water flooding, salt water disposal, lean oil service, crude and gathering lines, bottom hole pump service, product lines, pumping liquids such as butane, propane, ethylene, diethylene glycol, etc.



3½" x 6" Septuplex. 250 rpm.
15,000 bbl per day. 2020 psi.

Oil Men Select Aldrich Direct Flow Pumps because

. . . operating speeds are high. You get whatever volume and pressure you need from a smaller, lighter, more compact pump.

. . . fluid-ends are sectionalized. Parts can be replaced at low cost and can be made of stainless steel, bronze, Monel or other special materials necessary for corrosive fluid service.

. . . maintenance is simplified. No more tapered bores in the working barrel to make valve removal difficult. Now, manifolds slide out on studs and you can lift out valves as complete units. Packing is very easy to renew due to the accessibility of the stuffing boxes.

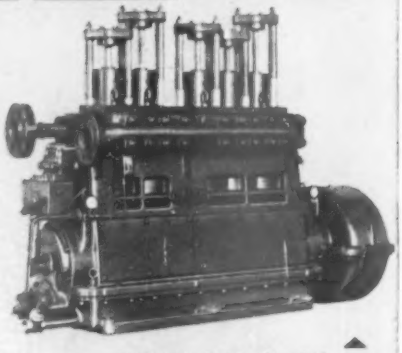
. . . plunger sizes are changeable. In many cases it is only necessary to add—besides plungers—new glands, throat bushings and packing to the same fluid-end. "Kosmos" Porcelain Plungers are standard for salt water service.

. . . wearing parts are interchangeable among 3, 5, 7 and 9 plunger pumps of the same stroke sizes. This minimizes spare parts costs and inventories.

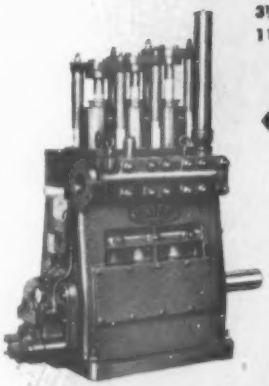
. . . ample stocks of spare parts are maintained at Mid-Continent and California locations.

For information or catalogs, contact your nearest Aldrich representative . . . or write us direct.

Statistics shown here are for pumps operating on actual projects. Other size pumps, other volumes and pressures are available.

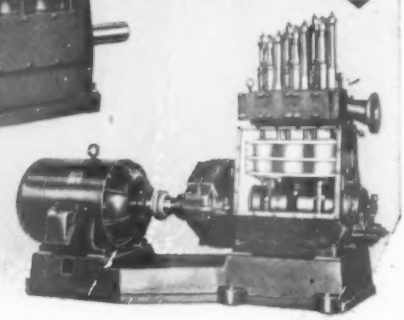


3¼" x 5" Quintuplex. 360 rpm.
11,100 bbl per day. 713 psi.



2½" x 3" Triplex. 500 rpm.
2,360 bbl per day. 1100 psi.

1¾" x 5" Triplex. 320 rpm.
1,540 bbl per day. 2500 psi.



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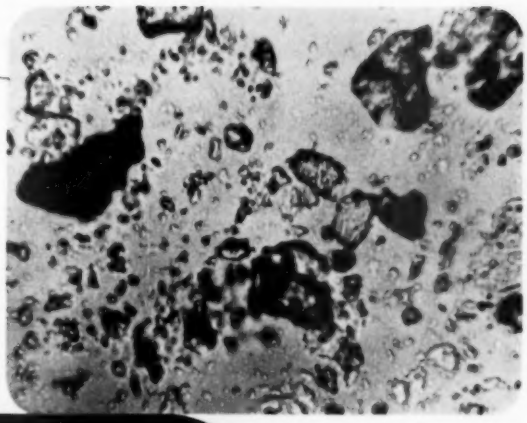
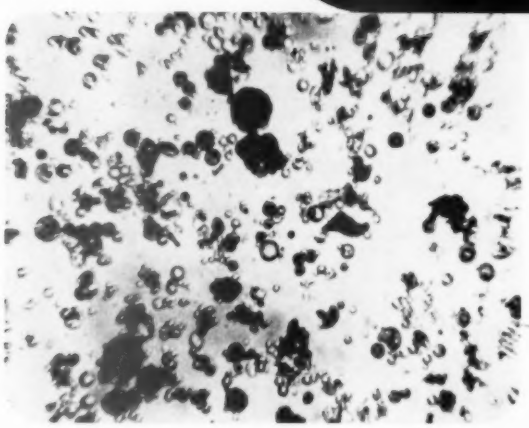


Photomicrograph
Magnification 700X
TYPICAL PORTLAND CEMENT

lower density minimizes formation breakdown!

Photomicrograph
Magnification 700X
POZMIX



HALLIBURTON'S POZMIX CEMENT

One of the special qualities that distinguishes dry Pozmix from ordinary portland cements is its lower density. Pozmix, for example, has specific gravities from 2.2, depending on the source of pozzolans, while portland cement is 3.1 and above.

This factor is vitally important to the operator attempting to cement above permeable formations because the lighter weight Pozmix slurry reduces the likelihood of formation breakdown.

In addition to lower density, Halliburton's judicious blend of pozzolanic materials and portland cement possesses these cementing advantages for the operator:

- **Increased resistance to corrosive water.**
- **Lower heat of hydration.**
- **Improved water seal.**
- **Easier pumpability.**
- **Greater resiliency.**

Pozmix, now available in bulk, is a real money saver. It actually costs less initially, and it lessens the need for remedial work. Take advantage of this unique blend and Halliburton million job experience on your next job.

Phone your nearby Halliburton representative for swift service. Or contact Halliburton Oil Well Cementing Company, Duncan, Oklahoma.

HALLIBURTON YEARS AHEAD IN OIL WELL CEMENTING!

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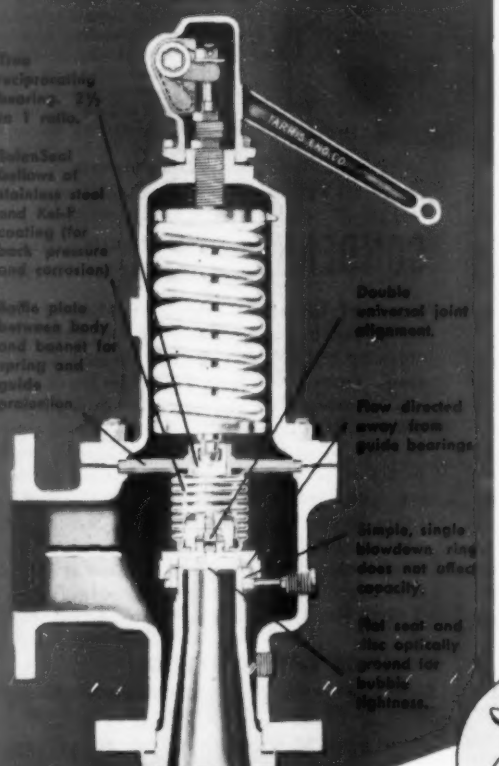
NOT A HOTEL CHAIN
INDIVIDUALLY OWNED

for economical positive* safety...

BalanSeal and FarriSeal Safety-Relief Valves

(Pat'd & Pat. Pending)


Double universal joint alignment.
Flow directed away from guide bearings.
Simple, single blowdown ring does not affect capacity.
Nat seat and disc optically ground for bubble tightness.

Eliminate all risk of failure—failure that might cost lives or severe damage to equipment. Rely on the only safety-relief valves guaranteed to provide positive protection, 100% of the time, under all operating conditions. Farris safety-relief valves *can't* stick, plug or corrode because the critical working parts are completely isolated from the lading fluid—and they're unaffected by back pressures in the discharge manifold. These unique valves are more economical, too, because they permit higher downstream pressure with smaller discharge piping. In many installations this saving in piping costs amounts to as much as 15 times the cost of the valves. *You* can't go wrong with BalanSeal or FarriSeal Valves because *they* can't go wrong!

Technical manual, 51B, a treatment on Back Pressure Piping and Surge characteristics and 76-page catalog is yours for the asking.

* ASME-N.B. APPROVED
(Certified for Capacity)

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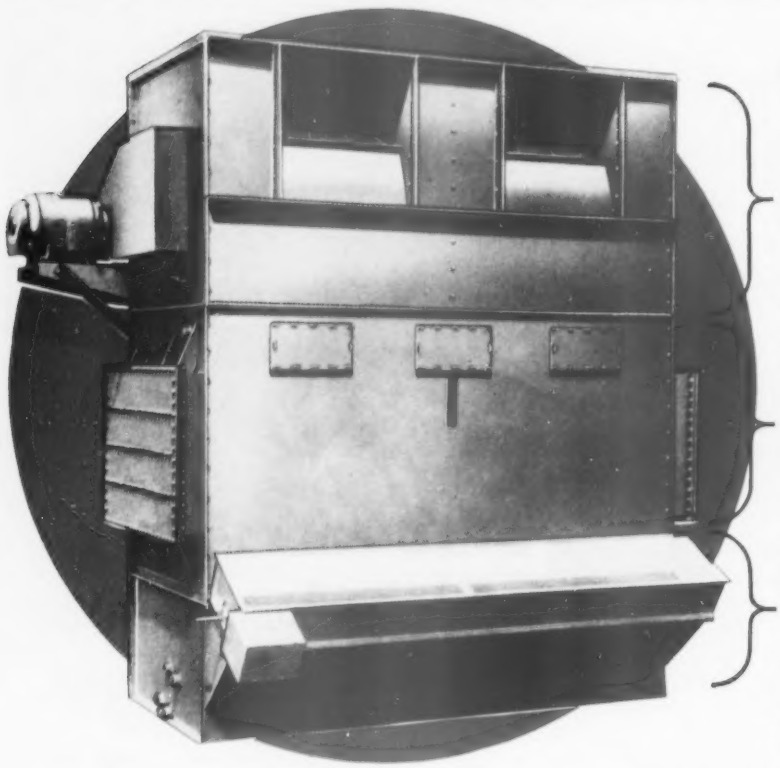
Affiliates: Farris Flexible Valve Corp. • Farris Stacon Corp. • Farris HydroTorque Corp. • Farris HydroSeal Corp.

Solve Big Cooling Problems with YOUNG EVAPORATIVE COOLERS



BLOWER SECTION

Built as a complete unit, this section consists of dynamically balanced multi-blade centrifugal blower, outlet scrolls for the blower housing, standard NEMA splash-proof motor, variable V-belt drive and air discharge duct. The blower fan is corrosion-resisting, double inlet design, dynamically balanced for long life, quiet operation.

COIL SECTION

Cooling coil section consists of straight, round, seamless tubes—copper, stainless steel or red brass—each rolled into header plates with baffles for multi-pass flow. Gasketed tank cover plates are used on coils for water and oil cooling. Tubes for cooling gases are rolled into steel tank headers with plugs opposite each tube for easy cleaning. Assembly also includes spray header, spray nozzles, moisture eliminators and inspection windows.

SUMP SECTION

The bottom, or sump section, consists of a water-tight, galvanized and rust-resistant reservoir for makeup and spray water, self-regulating float valve, and thermostatically controlled automatic shutters for the air inlet, air outlet, or both. The float valve automatically provides the volume of makeup water required to compensate for water losses due to evaporation and wastage.

Full length access door in sump tank for ease of service, and cleaning sump.

COOL— Jacket Water . . . Steam . . . Lube Oils . . . Natural Gas

For maximum heat transfer efficiency, select Young Evaporative Coolers to solve your big cooling problems. Versatile in design and completely self-contained, YEC units cool the liquid or gas in the coil by evaporation when water is sprayed over the coil assembly. Units are used primarily for cooling engine jacket water and lubricating oil (gas, gasoline, Diesel engines), steam, compressed air, natural gas or other fluids, and also for condensing steam, hydrocarbons, etc.

Designed and engineered to give long, efficient performance, Young Evaporative Coolers are built in six basic models, either with single or two coil assemblies. Normal operating pressures of 100 psig

CONDENSE— Hydrocarbons . . . Steam . . . Other Fluids

are used for water and oil cooling. However, for steam and natural gas cooling and condensing, pressures up to 2000 psig can be handled. Unit capacities range from 876,000 to 8,712,000 Btu's per hour.

Coil assemblies for water, oil and gas service consist of straight, round, seamless copper, stainless steel or red brass tubes, each rolled into thick header plates at each tank with multipass baffles. Oil cooling units use chain-type agitator strips inside the tubes to increase heat transfer. Straight Admiralty tubes in the Gas Cooler coil assembly are rolled into steel tanks with a plug opposite the end of each tube for easy cleaning. For special cooling jobs, call on a Young Representative, or write direct.

Young Quality

GET THIS NEW CATALOG!

Illustrated Catalog No. 1952 gives specifications, dimensions, capacities and features of YEC units.

YOUNG . . . AN "OLD" NAME IN HEAT TRANSFER ENGINEERING

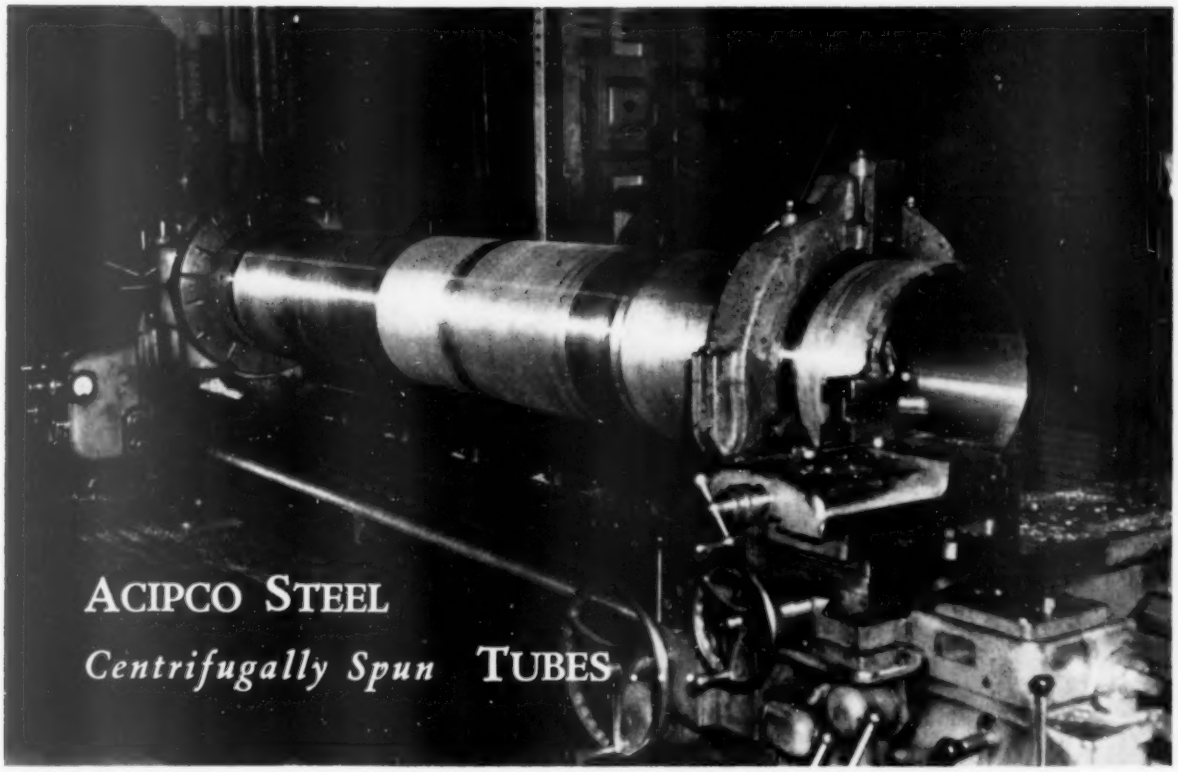
YOUNG RADIATOR COMPANY

Dept. 203-E • Racine, Wisconsin • Factories at Racine, Wisconsin and Mattoon, Illinois

OIL FIELD DISTRIBUTORS: TULSA—J. R. Meek Co., 1341 S. Boston St., Rm. 109 • LOS ANGELES—Flournoy & Everett, Inc., 5043 Santa Fe Ave. • MUSKEGON—Harold J. Young, 206 Montgomery Blvd.

Other Representatives in Principal Cities

See our Exhibit at the International Petroleum Exposition, Tulsa, Okla., May 14-23. Booths 67-68 in Scientific and Technical Bldg.



SERVE THE OIL AND GAS INDUSTRIES

ACIPCO has long produced high quality centrifugal cast iron pipe for the oil and gas industries. This pipe is conveying gas, crude oil, gasoline, sour naphtha—and in fact about everything a pipe line can conceivably convey. Today, another ACIPCO product is meeting wide approval — ACIPCO STEEL Centrifugally Spun tubes.

ACIPCO tubes are manufactured to meet national standard specifications; and a wide range of sizes make them ideal for countless applications including casing heads, slush pump liners, drill collars, furnace tubes, hydraulic cylinders and other uses. ACIPCO tubes are heat treated in modern vertical furnaces to obtain uniform strength properties; and are carefully inspected for conformance to specific chemical analysis and rigidly tested for compliance with physical property requirements. They can easily be further shaped by conventional forging methods.

SIZE RANGES: 2¼" - 50" O.D.; ⅜" - 4" wall.

TYPES: Carbon, alloy and stainless steel, cast iron and Ni-Resist.

SPECIFICATIONS: A.S.T.M., A.M.S., A.B.S., A.C.I. and A.I.S.I.

AMERICAN CAST IRON PIPE COMPANY

BIRMINGHAM 2, ALABAMA

MAIL COUPON FOR FREE CATALOG

American Cast Iron Pipe Company,
Birmingham 2, Alabama

Gentlemen: Please send me a free copy of your new illustrated catalog, "ACIPCO STEEL".

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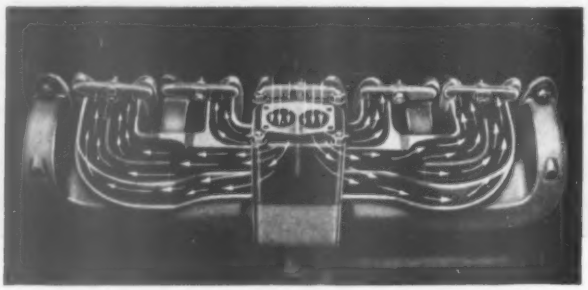
Company

Street

City State

Engineered to Excel
IN THE OIL FIELD

Continental Red Seal oil field power is engineered and built with the rigorous requirements of oil field use in mind. A product of more than 50 years' specialized experience, it embodies an array of quality features—many of them exclusive—making for economy, dependability and long troublefree life. What is equally important, it has the backing of genuine parts and factory-authorized service from coast to coast, wherever there's Red Seal power in use.



PATENTED INDIVIDUAL PORTING

This exclusive feature, one of many outstanding engineering achievements in the Continental Red Seal line, helps to wring the final ounce of power from the fuel—promotes smoothness too—by assuring uniform distribution of fuel mixture to all cylinders, at all times.

Continental Motors Corporation
MUSKEGON, MICHIGAN

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CHEMICAL PROCESS NEWS

PUBLISHED BY CHEMICAL PROCESS DIVISION, THE M. W. KELLOGG COMPANY — MAY 1953

NOTES ON

Ammonia

Of vital importance to the efficiency and low maintenance cost of any ammonia plant is the design of the reactor in which synthesis gas is converted to the end product.

* * *

Close control of temperature is extremely important in the reactor. To attain a reaction rate high enough to produce an economic yield of ammonia, temperatures must closely approach a critical point. Should this point be exceeded, catalyst activity deteriorates rapidly and construction materials are subject to accelerated attack by corrosion.

* * *

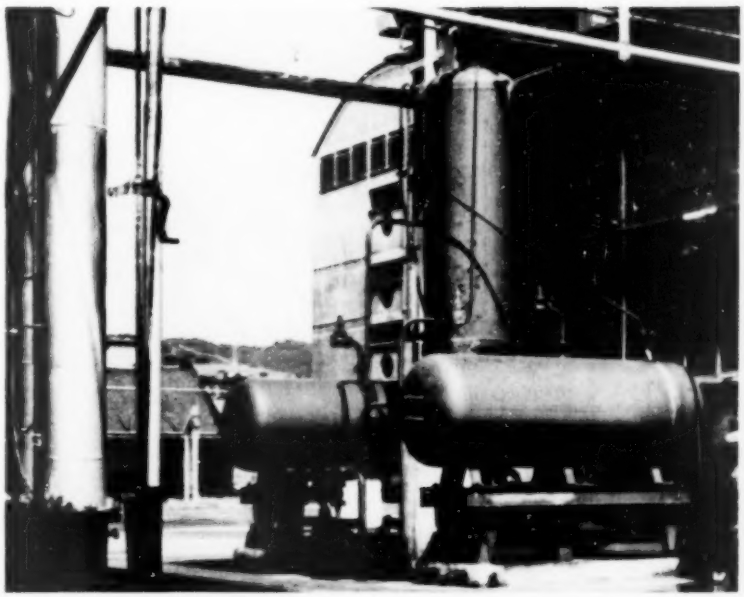
In the ideal ammonia converter, it is essential to remove excess heat as rapidly as possible from every point where exothermic reaction occurs. Since these points "move about" through changes in the conditions of operation and through aging of catalyst, the design of an economical converter that completely solves the problem of excess heat removal is a difficult engineering feat.

* * *

The Kellogg reactor, which employs layers of catalyst with an efficient means of cooling the gases in between, closely approaches the ideal point-by-point temperature control.

* * *

In addition to a 150 ton-per-day plant now going up on the West Coast, Kellogg has designed several others employing this type of reactor. Three large ones were built virtually simultaneously during World War II. Since they have been in operation they have continued to maintain the highest efficiency levels in the industry.



Lower Initial Investment, Decreased Operating Cost with New Urea Process

A new, low-cost method of producing synthetic urea of exceptional purity from ammonia and carbon dioxide is now available in the United States through Kellogg. Known as the Montecatini Urea Process—after the well-known Italian firm which developed it—the method reflects more than 30 years of experience in nitrogen chemistry.

One of the important features of the Montecatini process is the reduction in operating cost due to the virtual elimination of the corrosion problems generally associated with urea synthesis. This is accomplished not only through judicious materials selection but also through the use of relatively mild operating conditions in the reaction zone in comparison with other urea processes. Furthermore, high concentration of ammonia also tends to curb corrosion.

To reduce initial investment, as well as operating costs, the process employs a partial recycle of ammonia and ammonium carbamate in liquid form in order to keep to a minimum the need for costly compressors. The lower temperatures employed eliminate the necessity for employing expensive alloy equipment in many parts of the plant.

While a total recycle plant that gives 100% yields has been piloted, the present commercially operating process makes it possible to obtain 70 and 80 wt. % conversion of NH_3 and CO_2 respectively. Considering the fact that urea production is often in connection with the preparation of fertilizer products, the existence of excess ammonia in the tail gas provides a ready source of NH_3 for additional production of the standard sulfate and nitrate fertilizers.

In addition to these factors affecting the costs of plant and operation, it is also of interest that the process produces resin-grade urea under all conditions without the additional expense of a special purification step to remove entrained impurities. The product from the Montecatini process meets the following specifications:

Nitrogen	46.3 wt. %
Water Content	0.5 wt. %
Free NH_3	0.02 wt. %
Ash	0.003 wt. %
Biuret	0.01 wt. %
Aqueous solution of 5% urea	clear and colorless

This final specification is a difficult one to meet and is particularly important for plastics manufacture. The low biuret content is also of importance in this application.

This process employs no lead-lined equipment, eliminating any possibility of lead toxicity when urea is used as cattle feed supplement.

(SEE REVERSE SIDE)

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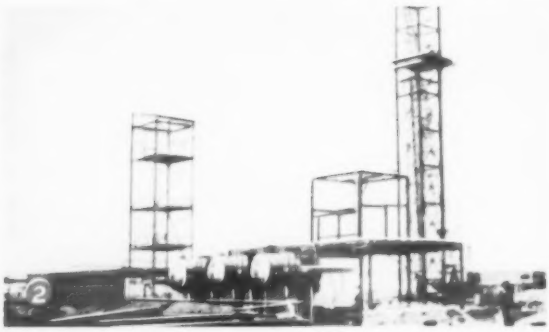

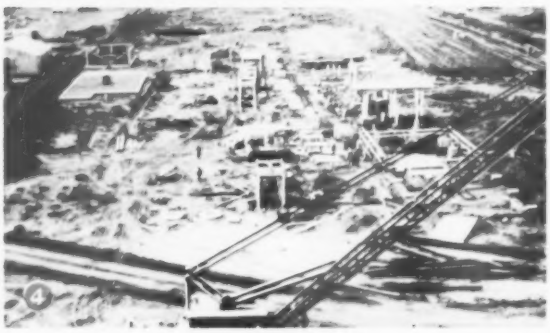

More than 20 Major Chemical Processing Steps Involved in Project

The South African project to obtain gasoline, diesel fuel and chemicals from indigenous coal deposits is now well underway. The huge $50 million plant, for which Kellogg is project manager, comprises a multitude of different units. The overall program includes projects from the opening of a virgin coal mine to the final production of fuels and purification of chemicals. Progress photos shown here include just four of the major chemical processing projects included in this most complex chemical engineering-contracting task for South African Coal, Oil and Gas Corporation (SASOL).

Photo No. 1 shows the unit which will receive the gas stream from the coal gasification plant to produce synthesis gas. This is then fed to Kellogg's unique Synthol process (Photo No. 2) where the actual synthesizing step is performed. Progress on the fixed bed catalytic operation is shown in Photo No. 3. When completed, the foundations shown in Photo No. 4 will support the oil recovery system.

Among the chemicals which will be produced as dictated by market conditions are ethanol, propanol, butanol, acetone, methyl ethyl ketone, benzol, toluol, phenol, ammonium sulfate, light and heavy creosotes and several waxes and tars.

* * *

For further information, technical data, etc., relating to chemical or petrochemical processing, write

CHEMICAL PROCESS DIVISION
THE M. W. KELLOGG COMPANY
225 Broadway, New York 7, N. Y.
Also Jersey City,
Los Angeles, Tulsa, Houston, Toronto,
London and Paris
KELLOGG PULLMAN

RESA Branch Is Installed at Kellogg

Dr. Donald B. Prentice, National Director of the Scientific Research Society of America (RESA), presents official charter to Joseph F. Skelly, first president of the new Kellogg RESA branch. Warren L. Smith, president of Kellogg standing at left, was one of prime movers for formation of a RESA unit. The Company mustered 58 charter members at the recent investment ceremony, expects the branch's eventual membership to number in the hundreds.

ETHYLENE PROPYLENE BUTYLENE
ACETYLENE
TOULENE BENZENE XYLENE
ETHANOL PROPANOL BUTANOL ISO OCTYL ALCOHOL
AMMONIA UREA
CARBON MONOXIDE HYDROGEN
GLYCERIDES

ARSENICAL ADMIRALTY-439:

OIL REFINER'S FAVORITE

WHERE oil refinery products handled by heat exchangers and condensers present no unusual problems of corrosion, high temperatures or high cooling water velocities, long experience indicates that tubes of Arsenical Admiralty-439 are the logical choice for satisfactory service life at economical cost.

This ANACONDA Tube Alloy offers good resistance to gas streams from both sweet and sour crudes and satisfactorily resists gases from sour crudes containing neutralizers. In addition, it is highly resistant to dezincification and, thus, can handle corrosive cooling waters at relatively high temperatures—a property which makes it definitely superior to non-arsenical Admiralty in most applications.

Whatever alloy best fits your operating conditions, choose it from the extensive line of ANACONDA Alloys for tubes and plate sheets. Our Technical Department's long experience in analyzing tube-performance problems is freely available to you. We have been working with copper and copper alloys for more than a century.

for efficient heat transfer

ANACONDA®
Heat Exchanger Tubes

The American Brass Company, Waterbury 20, Conn.
(In Canada: Anaconda American Brass, Ltd., New Toronto, Ontario)
Send me Publication B-2 "AnacondA Tubes and Plates for Condensers and Heat Exchangers"

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C-O-TWO

TRADE MARK

REG. U.S. PAT. OFF.

FIRE EXTINGUISHERS

give fast, positive fire protection

● Top quality backed by experienced engineering results in operating superiority at all times with the world famous C-O-TWO Squeez-Grip Carbon Dioxide Type Fire Extinguishers as well as the newer C-O-TWO Dry Chemical Type Fire Extinguishers. Furthermore, modern manufacturing facilities and extensive field testing, together with approvals such as the Underwriters' Laboratories, Inc., Factory Mutual Laboratories and Government Bureaus assure you of fast, positive action the instant fire strikes.

CARBON DIOXIDE TYPE

With C-O-TWO Squeez-Grip Carbon Dioxide Type Fire Extinguishers the penetrating carbon dioxide is a clean, dry, non-damaging, non-conducting inert gas . . . smothers fire in seconds, leaves no after fire mess . . . highly effective on flammable liquid and electrical fires, as well as some surface fires involving ordinary combustible materials. The C-O-TWO Squeez-Grip Valve is the greatest single contribution to the releasing of carbon dioxide for first aid fire fighting . . . just squeeze lever to open . . . release to close.

Convenient 2½, 5, 10, 15 and 20 pound hand sizes . . . discharge horn non-conducting, shatterproof construction. Also, convenient 50, 75 and 100 pound wheeled sizes . . . available with sturdy, wide-faced wheels either with or without rubber tires, as well as available with or without discharge hose and horn protection cover.

DRY CHEMICAL TYPE

With C-O-TWO Dry Chemical Type Fire Extinguishers the heat-shielding dry chemical is a non-conducting, non-abrasive, non-toxic, finely pulverized powder compound . . . blankets fire instantly . . . exceedingly effective on flammable liquid, gas and electrical fires, as well as surface fires involving ordinary combustible materials. The exclusive inverting design renders constant free flowing dry chemical, assuring faster, more effective and complete discharge.

Convenient 4, 20 and 30 pound hand sizes . . . no syphon tubes or valves within the cylinder to become clogged or inoperative . . . discharge hose and squeeze type discharge nozzle remain empty until actuation takes place . . . one piece removable top assembly. Also, convenient 150 pound wheeled size . . . sturdy, wide-faced wheels . . . discharge hose and two position discharge nozzle having soft or solid stream fully enclosed in protection casing . . . footrail and dual bar handle provide easy inverting.

Act now for complete free information on these fast, positive fire extinguishers. Remember fire doesn't wait . . . get the facts today!

C-O-TWO

MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers
Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems
Built-In Smoke and Heat Fire Detecting Systems

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Sales and Service in the Principal Cities of United States and Canada

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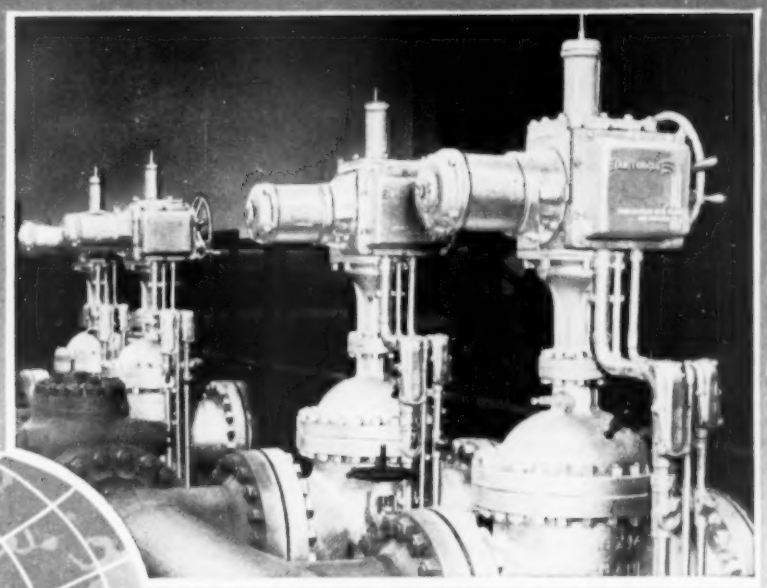
Facts speak for themselves



ON WORLD FAMOUS PIPE LINES

there are more LIMITORQUE VALVE CONTROLS THAN ANY OTHER MAKE

The wide preference of petroleum and gas pipe line owners and operators for LimiTorque Controls, stems from proven performance under all service and climatic conditions. The dependability of LimiTorque to open and close pipe line valves in adjacent or remote locations quickly, safely and surely is recognized far and wide.

For all types of pipe line or refinery valves, LimiTorque can provide the right control. Any available power source such as electricity, air, or gas may be used. On many recent pipelines the high pressure gas in the lines has been utilized as a power source.

See our booth in the Riddle and Hubbell Building
International Petroleum Exposition at Tulsa.

Philadelphia Gear Works, INC.

ERIE AVE. AND G ST., PHILADELPHIA 34, PA.

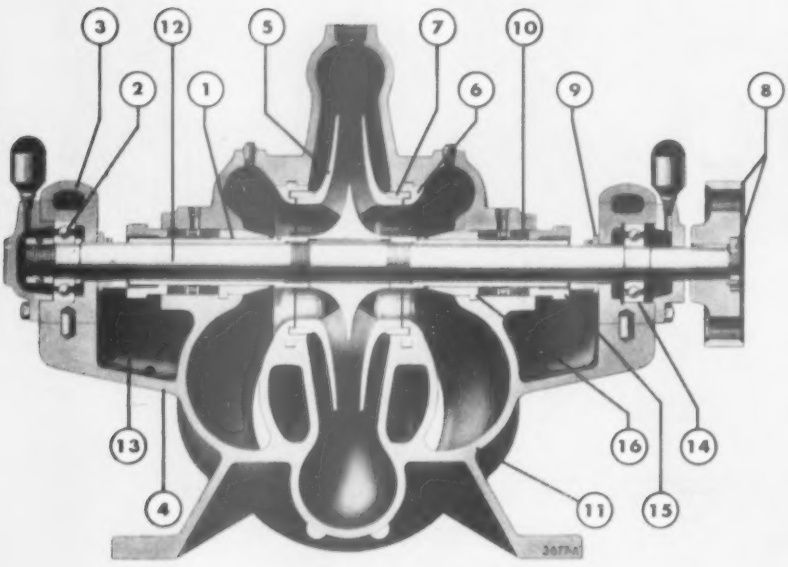
NEW YORK · PITTSBURGH · CHICAGO · HOUSTON · LYNCHBURG, VA.

Industrial Gears and Speed Reducers
LimiTorque Valve Controls

DE LAVAL

SINGLE STAGE CENTRIFUGAL PUMPS

for dependable industrial service



Labyrinth wearing rings minimize leakage...maintain high efficiencies

Labyrinth rings used in these De Laval pumps retard flow of water through labyrinth passage.

Flat rings showing relatively unimpeded flow of water.

(1) **Shaft Sleeves** are screwed on, to abut the impeller and make a water-tight joint. Sleeve expands freely and independently of shaft when temperatures change. There is no tendency to buckle.

(2) **Thrust Bearing** locates rotor axially.

(3) **Bearing Caps** easily removable for maintenance.

(4) **Bearing Brackets** scraped to lining bars for perfect alignment.

(5) **Impeller** hydraulically balanced, finished on all surfaces.

(6) **Labyrinth Wearing Rings** held accurately in machined grooves in both case and cover.

(7) **Impeller Wearing Rings** threaded on impeller, opposite to rotation.

(8) **Flexible Coupling** ground on all exposed surfaces and statically balanced, complete coupling supplied, pump half mounted on taper so that it can be easily removed. Check nut locks coupling on taper.

(9) **Deflector** keeps water out of bearing.

(10) **Stuffing Boxes** extra deep; lantern rings for water sealing.

(11) **Pump Case** horizontally split; machined to limit gages.

(12) **Steel Shaft** ground to limit gages.

(13) **Drip Boxes** large; provided with drain openings.

(14) **Radial Bearing** free to move axially, thus avoiding temperature strains.

(15) **Glands** split horizontally.

(16) **Protecting Bushings** renewable.

You can count on the performance of the De Laval Single Stage Centrifugal Pumps because they are precision-made to high manufacturing standards and incorporate the many quality design features shown in the cross-section.

They operate at high or low speeds, at high or low heads...with maximum efficiency.

For example, De Laval G, I and K Single Stage Double Suction Pumps have a capacity range of 175 gpm to 6,000 gpm, and heads to 300 feet. They are available in sizes ranging from 4" suction and 3" discharge to 14" suction and 12" discharge. Write for Bulletin 1002.

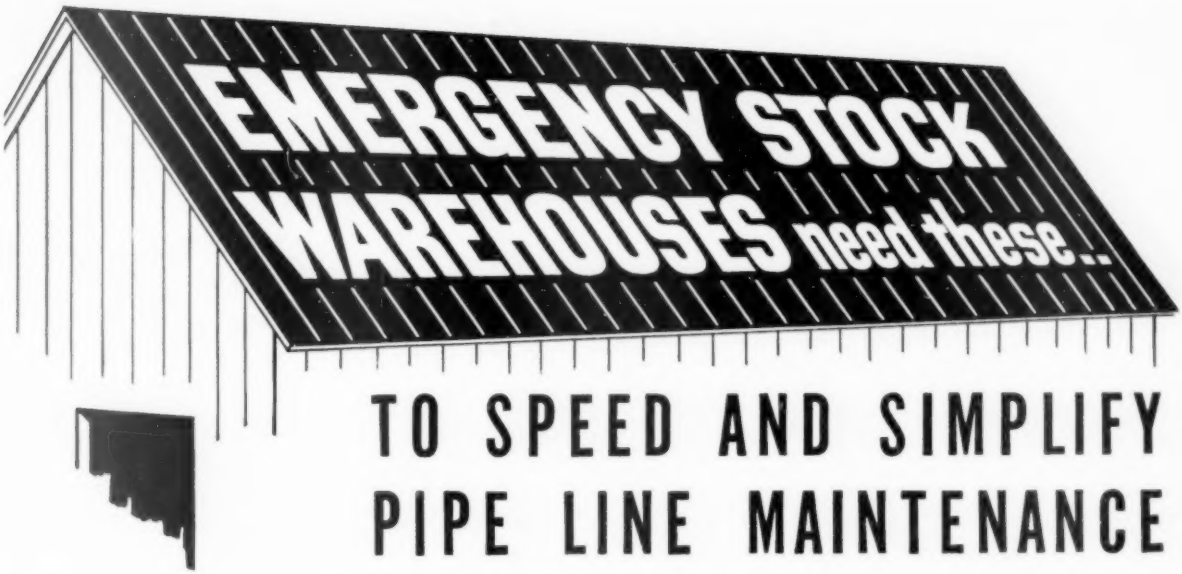
DeLaval also furnishes larger centrifugals for capacities up to 70,000 gpm. Bulletin 83-29R sent on request.

DE LAVAL *Centrifugal Pumps*

DE LAVAL STEAM TURBINE COMPANY

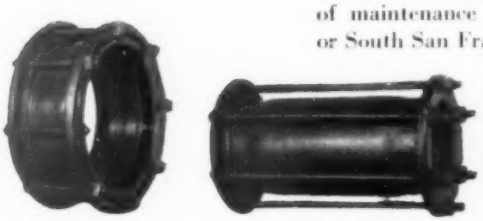
810 Nottingham Way, Trenton 2, New Jersey

DL 198



TO SPEED AND SIMPLIFY PIPE LINE MAINTENANCE

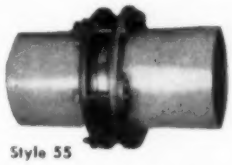
It always pays to stock Dresser Repair Equipment up and down the line to save valuable time in making repairs. Furnished for pressures as high as 1000 lbs. or more, these products make short work of dozens of maintenance problems. Buy them direct or from our Houston or South San Francisco Warehouses. Write today for catalog.



Style 38 Style 40

DEPENDABLE CONNECTIONS

For fast connections and repairs, use time-proved Dresser Couplings and Long Sleeves. Ideal for replacing damaged sections of pipe and for tie-ins. Quick and easy assembly—permanently tight. Complete size range.



Style 55

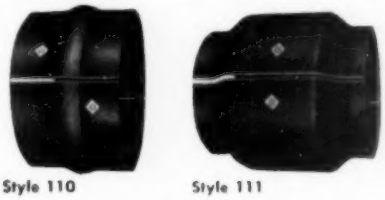
TO REPAIR POROUS WELDS

Dresser Porous Weld Clamp stops leaks fast, without shutting down the line. Simply put it around the weld and draw up the bolts. You get a permanent repair in a matter of minutes. Sizes 2" through 31".

Style 93 Style 96

FOR BREAKS, SPLITS, HOLES

Dresser Split Repair Sleeves are a quick, efficient means of repairing breaks, splits, holes and other failures in pipe lines. Easy to install. No loose parts—no welding. Self-sealing end-gasket pressure increases as line pressure increases. Sizes 6" through 24".



Style 110 Style 111

REINFORCING SLEEVES

Now available from Dresser in the best grade flange-quality steel plate. Uniformly perfect shaping assures easy installation. Vented against pressure build-up. Order Dresser Welding Sleeves for welded lines, Weld-over Sleeve for coupled lines. Can be furnished in special sizes and shapes when production quantities are involved.

DRESSER
MANUFACTURING DIVISION

59 Fisher Ave., Bradford, Pa. (One of the Dresser Industries). Warehouses: 1121 Rothwell St., Houston, Texas, 101 S. Bayshore Highway, South San Francisco, California.

Model No. 2½ Model No. 5 Model No. 10 Model No. 15 *(Shown above in action)* Model No. 20

NEW ALFCO CARBON DIOXIDE EXTINGUISHERS QUICKLY SMOTHER HOT FLAMMABLE LIQUID OR ELECTRICAL FIRES

Five new Alfco Carbon Dioxide Fire Extinguishers . . . Models 2½, 5, 10, 15 as illustrated, and 20, are ready to provide faster fire protection against Class B and C fires. Model numbers also denote the weight capacity.

Each is equipped with a newly designed, simplified, and faster-acting valve, with added advantages for re-servicing in the field. Each unit expands its stored volume 450 times within 26 seconds or less in a quick fire-smothering avalanche of carbon dioxide gas and snow.

Note the following advantages over earlier models of this type: . . . Retained ruggedness with increased simplicity . . . Disassembles for servicing without special tools . . . Siphon tube is removable . . . Separate valve sealing member easily replaced . . . "O" ring seal around valve stem prevents gas seepage during operation . . . Operates faster . . . Squeeze-lever directly over valve stem gives quicker discharge . . . Straight discharge from valve for Models 10, 15 and 20 . . . Simplified swivel elbow on Models 2½ and 5 . . . Safety Disc side mounted instead of on top for added protection . . . Double prong locking pin prevents accidental discharge . . .

In charging these new units, no discs are required. Simply squeeze open the valve, permitting the recharge to enter the cylinder. Handsomely finished in red enamel. Discharge hose and horn in black. Hanging bracket and screws furnished. Vehicle mounting bracket available, also one for boats, barges, trucks, etc.

All hose equipped models have Alfco Anti-Statik Device. Write us to have salesman call, or for illustrated literature.
All Models Inspected and Approved by Underwriters and the Factory Mutual Laboratories

OUR *2nd Century of Leadership in* FIRE PROTECTION

AMERICAN-LAFRANCE-FOAMITE *Corporation*
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ALFCO

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THE GENERAL ELECTRIC EXHIBIT
BOOTHS 22 TO 26
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INTERNATIONAL PETROLEUM EXPOSITION

IMPORTANT NEWS of recent developments in G-E microwave and 2-way radio equipment will be given to you "first hand" by G-E engineers from Electronics Park and your own home districts. Following the tradition of other General Electric communication "firsts" . . . *railroads* . . . *airmail* . . . *production narrow band units* . . . *microwave* . . . these men will demonstrate today's most advanced G-E equipment. Meet them for the real payoff that makes your trip worthwhile!

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You can put your confidence in—

GENERAL ELECTRIC

Give fire half a chance and it will over-run you like a swarm of ants.

You must stamp it out anywhere it shows itself.

In the pumping station, power plant, garage.

That calls for a battery of strategically placed KIDDE Portable Fire Extinguishers.

Get the ants out of your plants.
Call your KIDDE dealer today

Kidde

Walter Kidde & Company, Inc.,

554 Main Street, Belleville 9, N. J.

Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

Merla Orifice Well Tester (with 7 Monel orifice plates of different sizes) designed to permit changing orifice plates without removing cap. Monel was the metal selected because it resists corrosion and pitting, conditions which would impair the usefulness of the tester. For more information about the Merla Tester, write the MERLA TOOL CORP., Dallas, Texas.

A "sweet" solution for sour gas and oil field problems

If you've ever wondered how to solve oil field corrosion problems you may find your answer in the experience of the MERLA TOOL CORPORATION.

They recently developed a new type orifice well tester which permits insertion of orifice plates without removal of the cap. They wanted a tester that could be placed anywhere without fear of failure by corrosion. Of course, the accuracy of the instrument depends entirely on the precise size of the orifice. Any corrosion, pitting or wear would ruin its accuracy. After experimenting with other metals, they decided on Monel. The Monel orifice plates preserve a constant orifice diameter indefinitely.

Monel is only one of the Inco Nickel Alloys which finds successful use even under the most destructive oil field conditions.

"K" Monel, for example, which is heat treatable for higher strength and hardness is used in springs and parts which get a good deal of wear.

And there's Inconel which is used in oil field tools and instruments because of its high fatigue strength and ability to undergo torsion time and again without significant change in response.

"S" Monel, an unusually hard casting alloy, is used in valve seats and other applications where anti-galling properties are necessary.

Do any of these metals have the qualities you need in your equipment? One of them may be a ready solution to your problem, too.

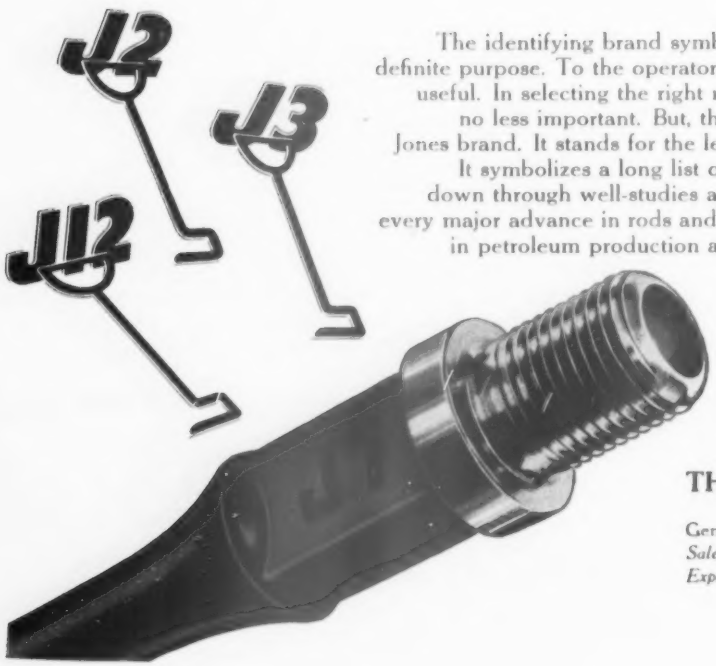
The International Nickel Company, Inc., 67 Wall Street, New York 5, N. Y.

It is advisable to place equipment orders with your supplier well in advance of scheduled use. Distributors of INCO Nickel Alloys can supply the latest information on availability from warehouse and mill.

Inco Nickel Alloys

MONEL® • "R"® MONEL • "K"® MONEL • "KR"® MONEL • "S"® MONEL
INCONEL® • INCONEL "X"® • INCONEL "W"® • INCOLOY® • NIMONICS®
NICKEL • LOW CARBON NICKEL • DURANICKEL®

A BRAND WITH A MEANING...



The identifying brand symbols on each Jones sucker rod serve a definite purpose. To the operator who keeps rod records, they are especially useful. In selecting the right rods to run in a particular well, they are no less important. But, there is a far more important meaning to the Jones brand. It stands for the leadership of more than half a century.

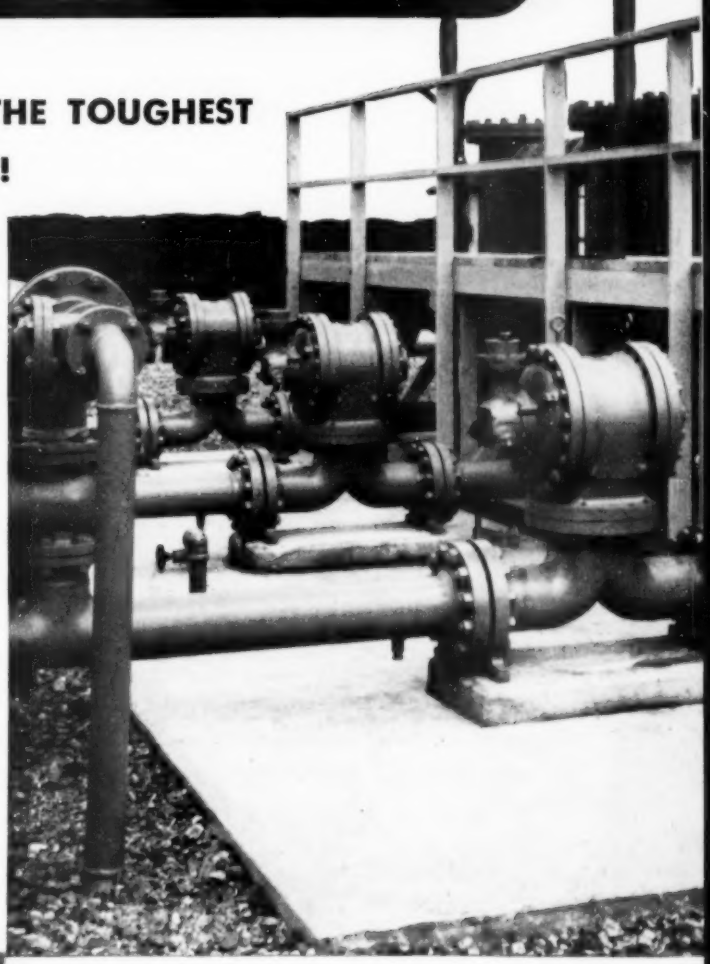
It symbolizes a long list of "firsts" from the first all-metal sucker rod down through well-studies and research and includes practically every major advance in rods and their use. It is instantly recognized by those in petroleum production as a mark of quality in sucker rods.

At Booths 15 and 16
Oklahoma Bldg.
during
The Oil Show

THE S. M. JONES COMPANY
Division of Buffalo-Eclipse Corporation
General Office and Factory: TOLEDO, OHIO
Sales Office: Kennedy Building, Tulsa, Okla.
Export Sales Office: Buffalo International Corp.
50 Church Street, N. Y. C.

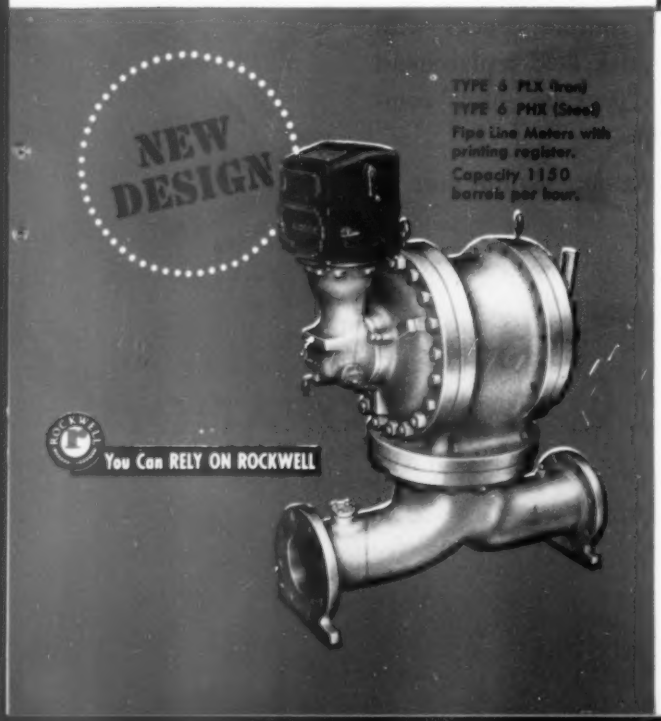
ROCKWELL *ROTOCYCLE* METERS

JOB PROVED ON THE TOUGHEST PRODUCT PIPE LINE SERVICES!



You'll find Rockwell Rotocycle meters faithfully serving at input and take off points on many of the nation's leading product pipe lines. These meters have established impressive durability records while accurately counting the barrels as they roll through the line.

Rockwell Rotocycle meters have the exclusive "Flo-ward" operating principle in which all moving parts revolve in the direction of the flow. No other meter runs so smoothly and freely—none offers less resistance to line flow. This means you can use smaller motors to drive your pumps. You can realize important savings in power.


NEW DESIGN
TYPE 6 PLX (Iron)
TYPE 6 PHX (Steel)
Pipe Line Meters with printing register.
Capacity 1150 barrels per hour.
You Can RELY ON ROCKWELL

NOW WE'VE MADE A GOOD METER *EVEN BETTER*

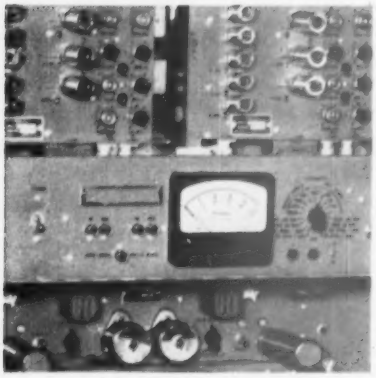
Rockwell engineers constantly seek new ways to make existing products better. Take for example, the improved PX series of Rotocycle Pipe Line meters. Here, a combination of better materials, stronger construction and newly designed anti-friction bearings make possible meters that will give even finer performance than those of the past.

Best of all, the PX series of improvements can be applied to meters already in service, right in the field, if desired, and at nominal cost and with minimum effort. Write us for full details.

ROCKWELL MANUFACTURING COMPANY

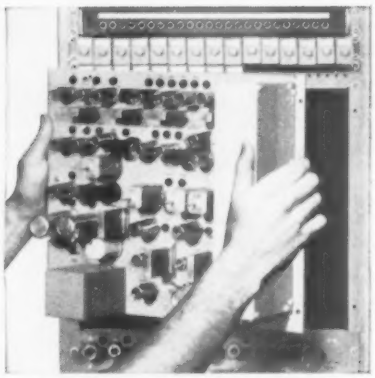
PITTSBURGH 8, PA. • Atlanta • Boston • Chicago • Houston
Kansas City • Los Angeles • New York • Pittsburgh • San Francisco
Seattle • Tulsa

PHILCO MICROWAVE CUTS COMMUNICATIONS COST



TEST JACKS AND BUILT-IN METERING
Field circuit analysis simplified by built-in metering and test points on every major circuit for instantaneous monitoring of any current or voltage.

ANTENNA-REFLECTOR SYSTEM
Tower climbing eliminated for routine checks since antennas are mounted at ground level, easily accessible for maintenance.

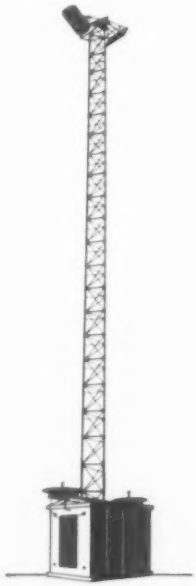


"PACKAGED UNIT" COMPONENTS
Field maintenance time and cost saved. All assemblies removable with only the use of a screwdriver for quick field replacement and depot checkout.

Reduce your communications cost with Philco microwave. Thousands of your communications dollars will be saved by the cost cutting features built into each Philco unit. Philco engineers know there is no substitute for quality and low maintenance cost.

That is why Philco microwave is built to Joint Army-Navy Specifications and why Philco's exclusive design slashes field maintenance time with built-in metering and test points on all major circuits . . . eliminates tower-climbing for routine checks with passive reflector-antenna system . . . allows quick field replacement of major assemblies with Philco's exclusive "packaged unit" components, removable with only a screwdriver.

Look to Philco microwave to cut your communications cost.



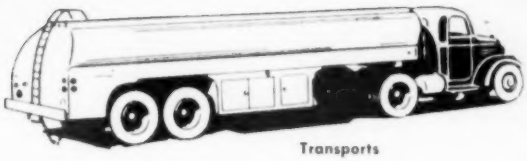
For full information write to Department OG

PHILCO CORPORATION

GOVERNMENT & INDUSTRIAL DIVISION

PHILADELPHIA 44, PA.

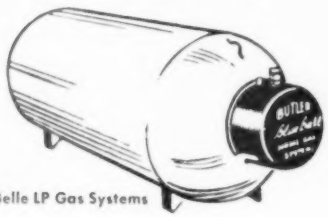
in Tulsa as always . . . .



Transports

Steel Buildings

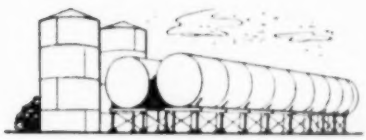
Truck Tanks



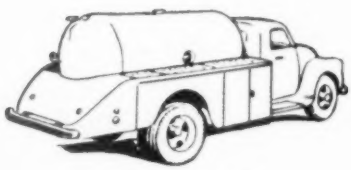
Blue Belle LP Gas Systems

Visit the Butler Exhibit at the International Petroleum Exposition & Congress
May 14-23
Tulsa, Oklahoma

Display location: Block 116
Residential address:
1232 East 25th Street, Tulsa
Tulsa Phone: 72-2745

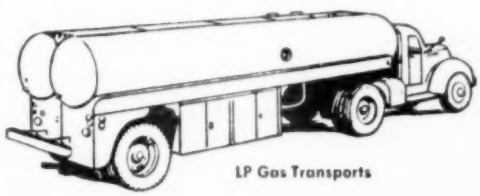


Welded Steel Tanks



LP Gas Truck Tanks

Bolted Steel Tanks

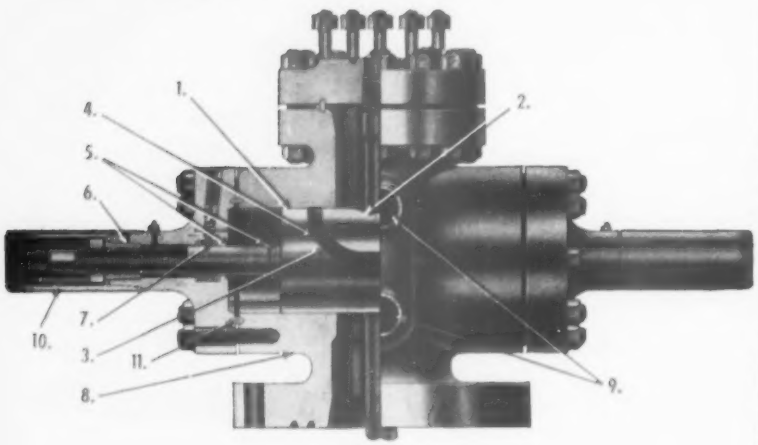


LP Gas Transports

. . . . . BUTLER
MANUFACTURING COMPANY

RECTOR ROUND RAM TUBING HEAD

Better Service and Performance through Better design . . . and construction!



● It takes all of these "Points of Superority" to give you everything you expect . . . and more . . . in service and performance from a ram type tubing head. That's why every one has been incorporated in the Rector Type CRS Round Ram Tubing Head.

They make the Type CRS the most efficient ram type tubing head you can install. You have a dependable, leak-proof seal for the life of the well. Rams operate smoothly and easily even after long standing. Placement of side outlets assures most convenient hook-up arrangement. Three methods of tubing suspension and stripper bowl interchangeable on the body assure flexibility to meet changing well conditions.

When installing a ram type tubing head, specify the Rector Type CRS Round Ram Tubing Head to get better service and performance. Ask your Rector Representative or authorized supply store.

RECTOR WELL EQUIPMENT COMPANY INC

MAKING THE OIL INDUSTRY SAFER

1100 NORTH COMMERCE ST. FORT WORTH, TEXAS

Houston Plant: 2215 Commerce St.

REPRESENTATIVES IN ALL ACTIVE FIELDS

RECTORHEAD RECTOR METHOD RECTORSEAL

POINTS OF SUPERIORITY

1. ROUND RAMS
Mud cannot accumulate on top to obstruct movement. Greater strength for suspending longer strings.

2. TWO-PIECE RAMS
Upper front segment is secured to main body by shoulder screw. One-piece, pre-formed oil resistant packing is inserted between the two segments. Packing is not under pressure while ram is being moved.

3. PRESSURE SEALING ELEMENT
When rams are closed upper segments and packing make first contact, forcing packing into pressure-tight seal with ram cylinder and around tubing.

4. SIMPLIFIED PACKING ARRANGEMENT
permits equalized pressure on under side and back of rams without ports or by-passes.

5. VALVE SEAT
in end flange and valve face on ram screw, seat when rams are drawn back; prevents well fluids from fouling ram screw.

6. THREADED BRONZE BUSHING
for ram screw eliminates steel-to-steel thread contact . . . assures easy movement of rams.

7. PLASTIC PACKING
around ram screws, between "V" retainers, assures pressure-tight seal.

8. STRONGER BODIES
with less weight made possible by round rams.

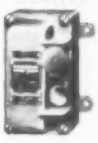
9. SIDE OUTLETS
threaded or flanged, provided above or below rams or one above and one below.

10. RAM SCREW PROTECTOR
can be used when rams are opened or closed.

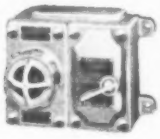
11. RAM BONNET
sealed to body with API ring gasket.

R&S Custom Built PANELS

. . . eliminate the problems of "special design" equipment!

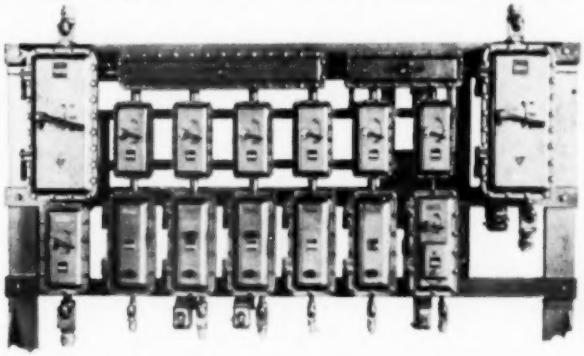


Explosion-Proof Equipment and Panels Are Used Throughout the Petroleum and Chemical Industries.

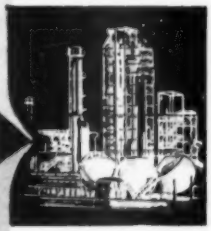


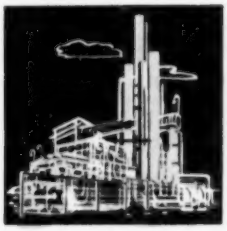
CIRCUIT BREAKERS

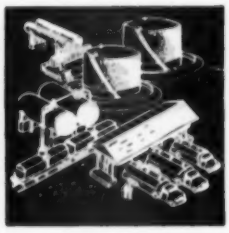
SEALING FITTINGS

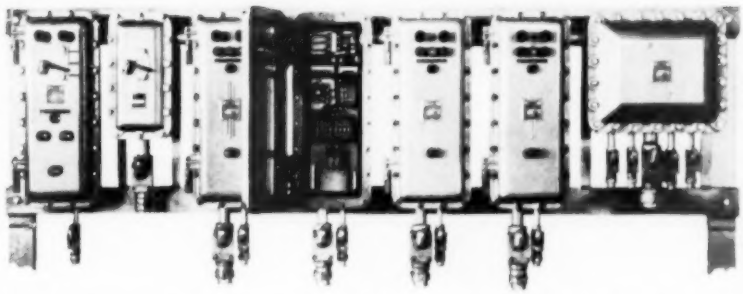


For products pipe line stations.









Front side of two-sided free standing panel for control of motor operated valves.

Russell & Stoll custom builds panels of many sizes and types *at the factory*—precision manufactured into complete panelboards ready for shipment and installation.

R & S sealed and tested panels arrive with a pedigree of proved performance, because standard quality R & S equipment and enclosures have been utilized as panel components. This faster, better method of panel construction eliminates the delays of "special design" units and the uncertainties of field assembled panels. Moreover, it assures a more efficient functional arrangement of components within the panel space.

For dependable centralized control over industrial, chemical and petroleum processing operations in hazardous locations, R & S will produce a standard or custom-built panel *right* for the job.

Write for Catalog H-47 13

RUSSELL & STOLL COMPANY, INC. • 125 BARCLAY STREET, NEW YORK 7, N. Y. D-12

RUSSELL & STOLL

PRECISION-BUILT ELECTRICAL EQUIPMENT—SINCE 1902

24 ACRES *Cover the World*

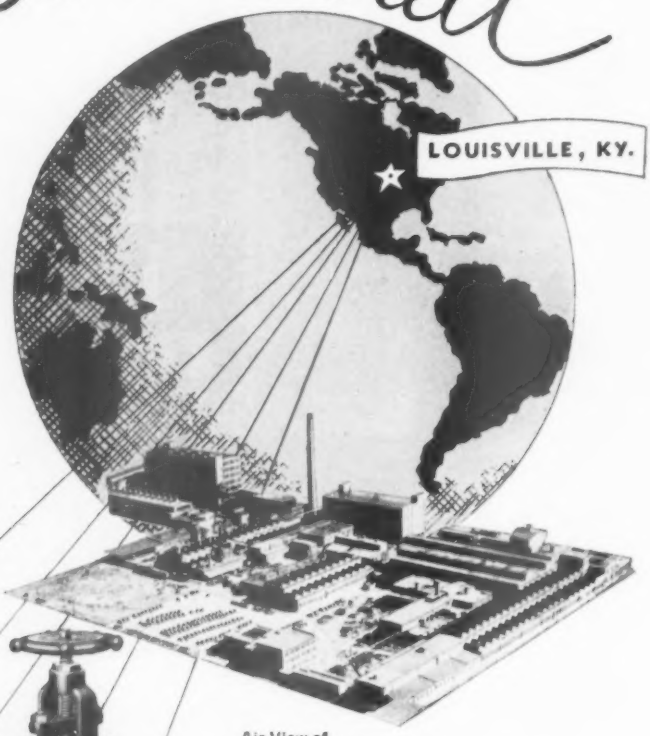
. . . with TOP QUALITY

DROP FORGED STEEL

VALVES, FITTINGS and FLANGES

by

Vogt



Air View of
Henry Vogt Machine Co.

This 24-acre Vogt plant supplies the most comprehensive line of top quality *drop forged* steel piping materials anywhere available to industry. That's why they're the choice of leading refineries, power plants, chemical plants, etc., the world around!

OUR COMPLETE LINE INCLUDES

Flanged, Screwed and Socket Weld End Globe, Gate and Check Valves • Ells, Tees and Crosses • Couplings • Bushings • Plugs • Unions • Flanges and Flange Unions • Welding Heads

HENRY VOGT MACHINE CO. LOUISVILLE 10, KY.

Branch Offices: New York, Philadelphia, Chicago, Cleveland, St. Louis, Dallas, Charleston, W. Va.

CHEVROLET ADVANCE-DESIGN TRUCKS

Famous for Their Saving Ways

—and here are 4 Powerful Reasons why!

EXTRA POWER! How can extra power save you money? The high-compression power (7.1 to 1 ratio) of Chevrolet's Loadmaster engines in heavy-duty trucks means extra power and extra miles from each gallon of gas. Chevrolet's Thriftmaster engine in light- and medium-duty models has long been known for economy of operation.

EXTRA STAMINA! Heavier, stronger construction throughout, more rigid frames! Now, Chevrolet trucks are sturdier and tougher than they have ever been in the past—better able to handle the roughest jobs day after day, months on end. Such outstanding stamina is one more factor—and an important one—in reducing your hauling costs.

MATCHED TO THE JOB, TOO! Every Chevrolet truck is carefully engineered and *factory-matched* to the job it will do. You don't buy too big a truck. You don't buy too small a truck. You get a truck with every unit matched and balanced to the work it will do—and that saves you money, too.

EXTRA OVER-ALL ECONOMY! Many things contribute to lower hauling costs with Chevrolet. But, few are as welcome news to buyers as the fact that Chevrolet trucks list for less than any other truck of comparable size and capacity. See your Chevrolet dealer. Chevrolet Division of General Motors, Detroit 2, Michigan.

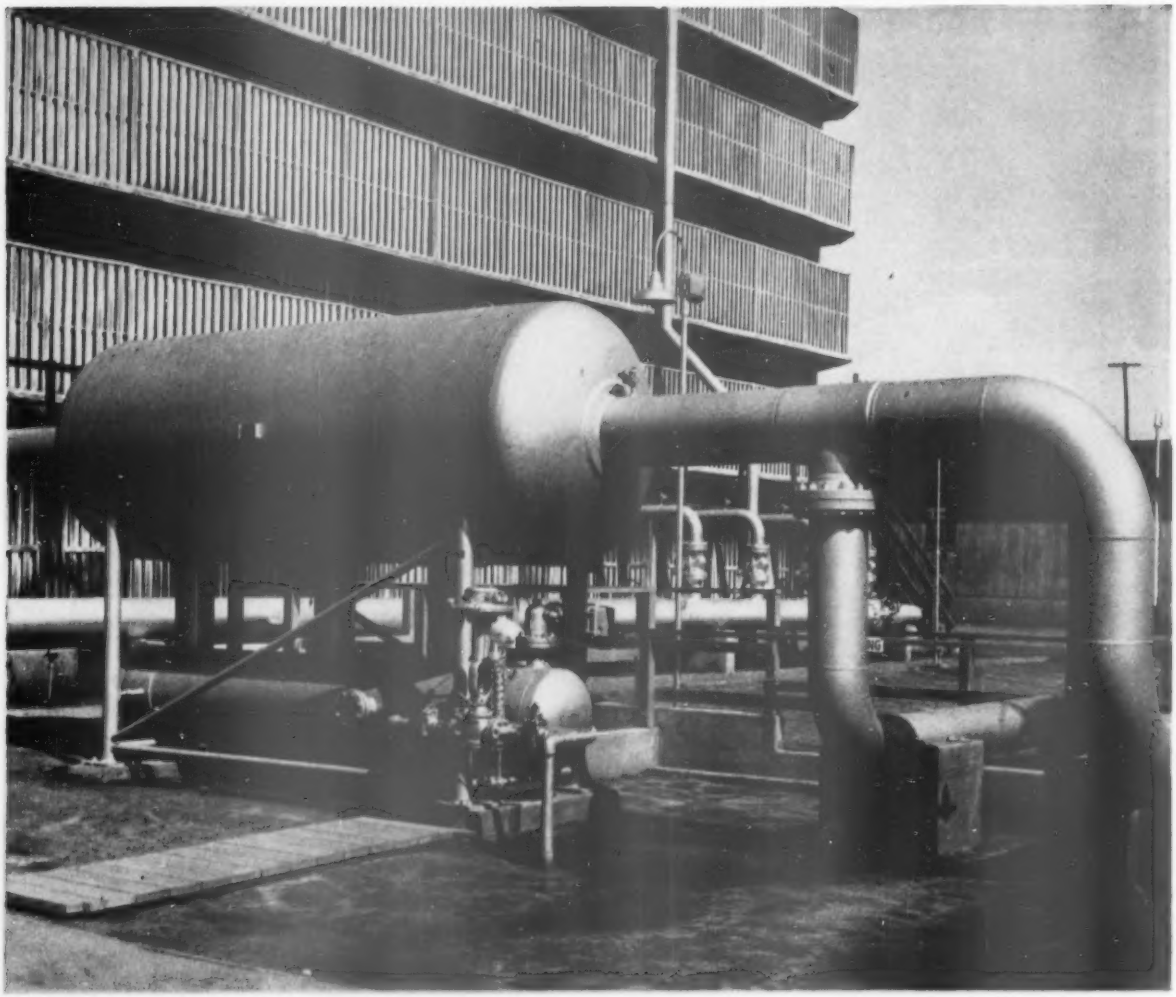
CHEVROLET ADVANCE-DESIGN TRUCK FEATURES

TWO GREAT VALVE-IN-HEAD ENGINES—the Loadmaster or the Thriftmaster—to give you greater power per gallon, lower cost per load. **POWER-JET CARBURETOR**—for smooth, quick acceleration response. **DIAPHRAGM SPRING CLUTCH**—for easy-action engagement. **SYNCHRO-MESH TRANSMISSION**—for fast, smooth shifting. **HYPOID REAR AXLE**—for dependability and long life. **TORQUE-ACTION BRAKES**—on light-duty and medium-duty models and on front of heavy-duty models. **TWIN-ACTION REAR BRAKES**—on heavy-duty models. **DUAL-SHOE PARKING BRAKE**—for greater holding ability on heavy-duty models. **CAB SEAT**—with double deck springs for complete riding comfort. **VENTI-PANES**—for improved cab ventilation. **WIDE-BASE WHEELS**—for increased tire mileage. **BALL-GEAR STEERING**—for easier handling. **UNIT-DESIGNED BODIES**—for greater load protection. **ADVANCE-DESIGN STYLING**—for increased comfort and modern appearance.

CHEVROLET

first in demand
in value
in sales

See PEERLESS FIRST!
For GAS SCRUBBERS . . .



The BEST SCRUBBERS for PIPELINES, GATHERING SYSTEMS, COMPRESSOR STATIONS, PLANT INLET SCRUBBERS

Pictured above is a Peerless 60" O.D. x 15 foot horizontal separator, handling 240,000,000 cu. ft. per day at 350#.

This separator is removing condensed liquid from the cooling tower to prevent moisture accumulation in distribution units.

Consult Peerless for an engineered solution to your most stringent entrainment problems.

PEERLESS MFG. CO.

PEERLESS MANUFACTURING CO.

P. O. BOX 7193 ★ DALLAS, TEXAS ★ DIxon-8431

REPRESENTATIVES IN ALL PRINCIPAL CITIES

The strongest rack bar makes the toughest jack

the Roustabout "1523"

A ratchet jack like the Duff-Norton all-purpose Roustabout "1523" is no stronger than its rack bar, the notched steel "heart" that moves up and down holding the load. The rack bar on this 15-ton capacity oil field jack is stronger and tougher than the rack bar on any other ratchet jack of this type. It's *stronger* because it's *larger!*

Next time you see a Duff-Norton ratchet jack, examine the rack bar; you'll notice it's oblong like this: ▬ . Then look at the rack bar on any other make ratchet jack. It's smaller, square like this: ■.

So you get the most and best for your money with a Duff-Norton Jack.

Ask your supply store salesman for the Duff-Norton Roustabout "1523." He has it in stock or can get it for you quickly. For complete specifications on this and other dependable Duff-Norton jacks, write the world's oldest and largest manufacturer of lifting jacks for special Oil Field Jack Bulletin, AD19-B, the Duff-Norton Manufacturing Co., P.O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

"Giving Industry A Lift Since 1883"

DUFF-NORTON

Jacks

Visit us at The Oil Show, BOOTH 154, Oklahoma Building

when you're in the hole.... you can count on BUCYRUS-ERIE SPUDDERS

Simplified controls — easy to reach, easy to manipulate — enable your driller to be on top of the job at all times. This means a saving in time and effort for him, a saving in money and material for you when quick action can prevent a fishing job.

Outstanding features of the easy working controls include:

1. **High and low speed levers, inter-connected to provide instantaneous speed change without stopping. Quick reverse, too, with reverse drive lever.**
2. **A sensitive and positive cam that controls engine speed.**
3. **An adjustable latch bar on the bull reel brake lever which allows automatic feeding as the drill bit cuts deeper.**

Ease of operation teams up with a string of other pace-setting Bucyrus-Erie spudder advantages. Write for complete details on the 60-L, 28-L, 36-L, 48-L.

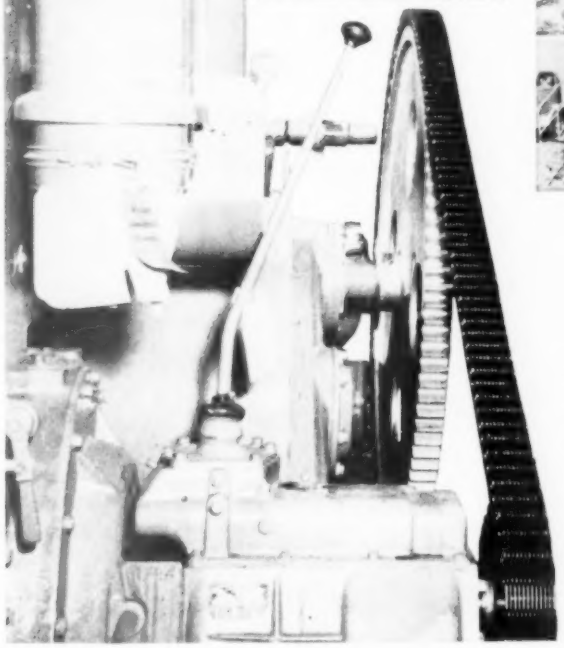
BUCYRUS-ERIE COMPANY
SOUTH MILWAUKEE, WISCONSIN

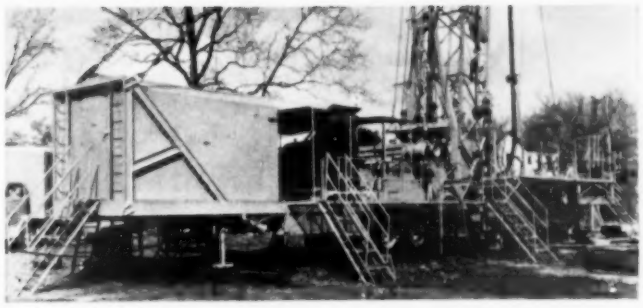
FIRST with the Finest in Spudders

BUCYRUS ERIE

6553

See the Hy-Vo Drive in operation at our IPE exhibit. Booths 14-16 on Silver Lane at North Entrance to Texas Building.





By-splitting rig load between two trailers, rig designer met all highway weight restrictions. By using Morse Hy-Vo Drive to power slush pumps, designer kept rig within 8′ road width limits.

View of rig's slender, extra-capacity Morse Hy-Vo Drive which transmits power to slush pump—and opens up a new era of oil-field power transmission. Hy-Vo transmits up to 5000 hp., operates at linear velocities up to 6500 fpm. It reduces operating costs as much as 50%, gives up to one-third longer service life. In many instances, Morse Hy-Vo does away with expensive, bulky outboard bearings; permits weight, space savings never before possible.

How a 1½″-pitch x 3″-wide MORSE HY-VO DRIVE helps provide portability in new dual rig!

This new dual-trailer rig incorporates a 96′ mast and working floor in a 60,000 lb., 40′ unit; drawworks, transmission, engine, and doghouse in a 57,000 lb., 37′ unit.

It will work a string of 3½″ drill pipe up to 6500′ long. It's designed to comply with all highway regulations; can be set up on location within two hours after arrival.

One of the big factors in the rig's portability and rigging ease is a slender, tough Morse Hy-Vo Drive running from a WAK Waukesha engine equipped with 8041 Brown lipe transmission to a 7¼ x 10 Gardner-Denver Slush Pump.

At high speeds, the 1½″-pitch x 3″-wide Morse Hy-Vo easily, smoothly, quietly delivers 480 hp. at 5500 fpm., has the extra toughness for handling increased torque when delivering same horsepower at 800 fpm.

Because the Morse Hy-Vo with required capacity was only 3″ wide, both engine and pump could be *permanently* mounted on one skid—within the 8′ wide road limit—thus avoiding necessity of special road permit or disassembly of unit on moving day.

What about *your* high-speed, heavy-duty applications? Think them over, with Morse Hy-Vo in mind. Write for specific information or send coupon for Hy-Vo Catalog.

BRANCH OFFICES AND REPRESENTATIVES

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Sales & Warehouse
Morse Chain Company
1312 La Branch Ave.,
P. O. Box 896

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Morse Chain Company
50 Church St.

Los Angeles
J. W. Minder
6011 Central Ave.

St. Louis
Bates Sales Co.
1025 N. Sixth St.

Pittsburgh
Morse Chain Company
803 Martin Bldg.
119 Federal St.

Vancouver, B. C.
Western Equipment, Ltd.
102 Main Street

Morse Chain Company, Dept. 471
7601 Central Avenue
Detroit 10, Michigan

Send free 16-page Morse Hy-Vo Drive Catalog immediately. I'm also interested in Morse Roller Chains and Stock Sprockets ☐ Morse Chain Couplings ☐ Morse Flexible Couplings ☐ Morse Radial Couplings ☐ Morse Cable Chain ☐.

Name _____ Title _____

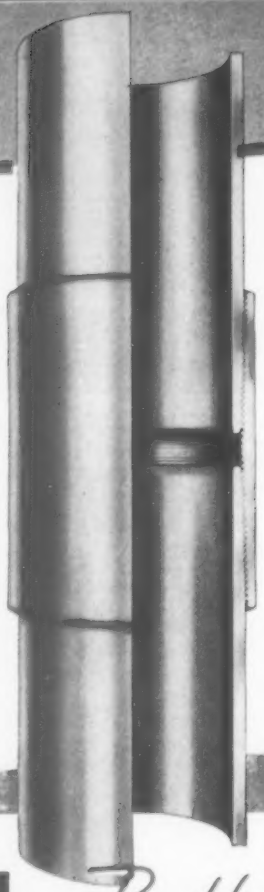
Company _____

Address _____

City _____ Zone _____ State _____

M=PT
MORSE *means* POWER TRANSMISSION

MORSE
MECHANICAL *POWER TRANSMISSION* PRODUCTS



It's New!

...eliminates the need for upset end casing—gives greater inside clearance for the drilling bit

...permits easy, faster coupling to power-tight position

...assures a safe and economical support for heavy deep well strings

...provides a joint comparative in strength to that of the body of the pipe

NATIONAL *Buttress-thread* CASING

CASING CROSS-OVER JOINT

NATIONAL Buttress Thread Casing was developed to give the petroleum industry something that was very much needed—a casing joint that will support the weight of casing for deep wells with the maximum of safety and economy.

Practically as strong as the body of the pipe, the high tensile strength of the buttress thread joint is due largely to the combined effect of the completely engaged runout threads and the three-degree flank angle of the thread which supports the weight of the casing in the well.

Hoop stresses, which in regular joints tend to reduce the permissible casing load, are here compensated for by the small flank angle which materially reduces this effect.

In the NATIONAL buttress thread joint, the *full* section of the casing is utilized in supporting the weight of the string. The coupling threads engage the casing threads throughout their *entire* length. That's because the ¾ inch-per-foot taper is continuous and without the conventional fast angle vanishing threads. In addition, the V-notch and fatigue effects on joint strength are almost entirely eliminated. The need for upset end casing is also eliminated which assures greater inside clearance for the drilling bit.

Only five threads per inch and the open form of the buttress thread permit easy stabbing, rapid spinning and require fewer strokes to pull the coupling up to power-tight position.

In most of the point-strength tests made, the buttress threaded joints have withstood loads equal to 100% of the ultimate strength of the body of the pipe. Distribution of the total joint efficiencies showed great uniformity with a resulting high minimum value.

For more information on National Seamless Drill Pipe Casing and Tubing, write National Tube Division, United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa. Ask for Bulletin No. 15.

COUPLING CROSS-OVER JOINT

NATIONAL TUBE DIVISION, UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

NATIONAL SEAMLESS

WALLS WITHOUT WELDS

drill pipe... casing... tubing

USS

UNITED STATES STEEL

Drilling

The oil industry knows Hercules engines for their rugged operation and dependability in powering all types of oil country equipment. 67 models of gasoline, gas or diesel engines are available ranging from 3 to 500 H.P.

In making shallow hole or deep—Hercules power units provide the right power . . . either in single unit or in compound operation.

Pumping

Throughout the oil industry—from the Canadian operations to the tropics—Hercules engines are at work pumping wells or speeding raw oil through pipelines to storage areas and refineries.

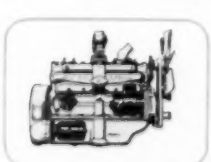
In these areas also, you'll find Hercules service stores or distributors for "top-notch" service—when you want it.

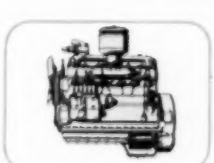
Distribution

Hercules engines, are also an important factor in transporting petroleum products to their many markets. In addition to highway equipment—Hercules engines are also used in ocean tankers, and rail equipment.

For assistance in solving your oil field power needs, contact Hercules—Engine Specialists Since 1915.

by Hercules Engines





HERCULES MOTORS CORPORATION Canton, O., U.S.A.

GAS • GASOLINE • DIESEL — ENGINES and POWER UNITS

Engine Specialists Since 1915

You're invited to visit the Hercules Exhibit Block 206 at the Tulsa Oil Show. Our oilfield people will be glad to discuss your power problems with you.

Standard Oil Company (New Jersey) reports on...

A big job...well in hand

(Highlights from the Annual Report for 1952)

People needed more oil in 1952 than ever before, but once again ample supplies were available to meet the demand. An important part of this big job was done by companies in which Standard Oil Company (New Jersey) has investments. These companies expanded their facilities to provide people of many nations with oil to heat and light their homes, fuel their ships and planes and trains, power and lubricate their factories, harvest their crops, and run their cars and trucks.

Jersey's Annual Report for 1952 shows how the big job of supplying people's oil needs has become even bigger. It shows, too, how well this kind of American enterprise handles it.

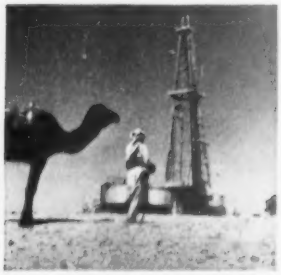
During 1952, Jersey's affiliated companies produced, refined and sold more oil than in any previous year. This meant more oil wells, more miles of pipe line, new tankers, additional refining capacity, and expanded distribution facilities.

It also meant large investments. During the year, new equipment and replacements cost $498,000,000. Since 1945, *almost three billion dollars* have been spent for this purpose.

The increased business brought to Jersey and its consolidated affiliates a record gross income for the year, but because of the higher costs of doing business, *net* income was $8,480,000 less than 1951's record high. About half of this net income of $520,000,000 was paid in dividends to the 269,000 persons who own Jersey.

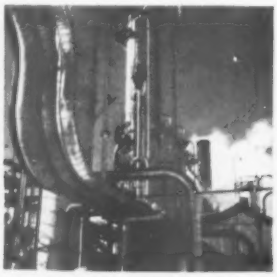
These pictures give some idea of the scope and scale of Jersey affiliates' activities during 1952:

New Oil Sources are located by constant search and by using modern equipment like this helicopter in Canada. New fields were also sought, with good success, in the U. S., South America, Western Europe, the Middle and Far East.



When Geologists Find a Likely Spot, or when known fields are being developed, new oil wells must be sunk, often at great cost. Here is a drilling rig in a project which expanded the known boundaries of an oil field in Saudi Arabia.

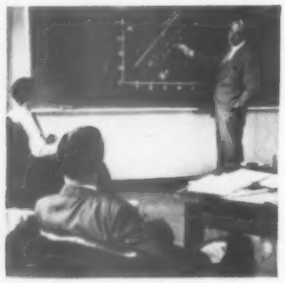
Many New Wells, such as this opening a Texas field, must be placed in operation yearly to meet demands. In 1952, although production of Jersey affiliates was 4 times that of 20 years ago, their proved reserves were at an all time high.



New Refining Capacity helps to meet the need for more and better products. The units shown above, for example, represented an important part of a recent modernization and expansion program at a Jersey affiliate's refinery.

Pipe Lines are costly, but provide the most efficient overland transportation of petroleum. This means cheaper, more abundant products. The pipe shown above went into a line delivering crude oil to a Venezuelan refinery.

Tanker Construction goes on constantly to meet requirements for water transportation of crude oil and finished products. During 1952 Jersey affiliates took delivery of two new ocean-going tankers like the one shown above, as well as four smaller tankers.



New Ideas are essential to meet people's needs for more and better oil products. Over $27,000,000 and the time of 2,500 employees were devoted to research in 1952. Notable results included a motor oil to maintain efficiency of high compression automobile engines.

FINANCIAL SUMMARY—1952

Standard Oil Company (New Jersey) and Consolidated Affiliates

Total income from sales, services, dividends and interest	$4,156,977,000
Net income	$519,981,000 or $8.58 per share
Dividends paid	$256,882,000 or $4.25 per share
Wages and other employment costs	$670,200,000
Taxes charged to income	$371,600,000
Other taxes, collected for governments	$384,500,000
Spent for new plants and facilities	$498,051,000
Number of shareholder-owners	269,000
Number of employees	120,000

The Annual Report tells the story in detail. We will be pleased to send a copy to anyone wishing it. Write Room 1626, 30 Rockefeller Plaza, New York 20, N. Y.

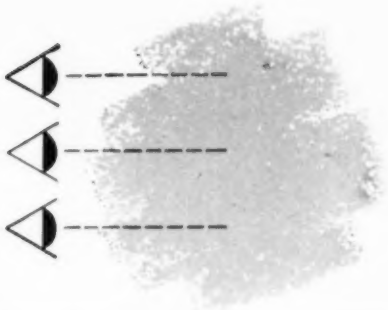
STANDARD OIL COMPANY (NEW JERSEY)

AND AFFILIATED COMPANIES

ESSO

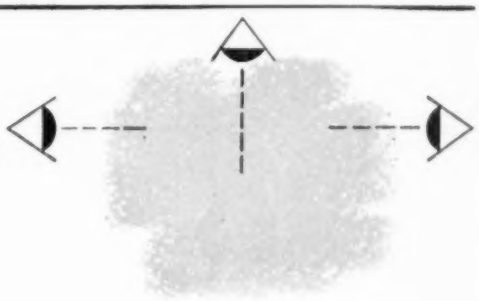
3-way analysis....

EXAMINATION
DIAGNOSIS
PRESCRIPTION



from 3 angles..

EFFICIENCY
SUITABILITY
COST



to gain 3 benefits.....

QUALITY
OUTPUT
ECONOMY

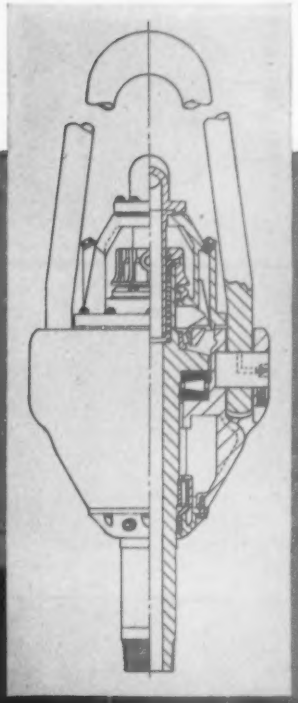
when you use Republic 3-Dimension Metallurgical Service

Fuzzy production problems shape up nice and square when the Republic Field Metallurgist and the Republic Mill Metallurgist and the Republic Laboratory Metallurgist all put to work their combined knowledge of alloy steels and heat-treatment and machining. Scores of Republic customers are making better products at greater rates and lower cost because they called in a Republic Field Metallurgist. It may be an idea *you* could use to your benefit!

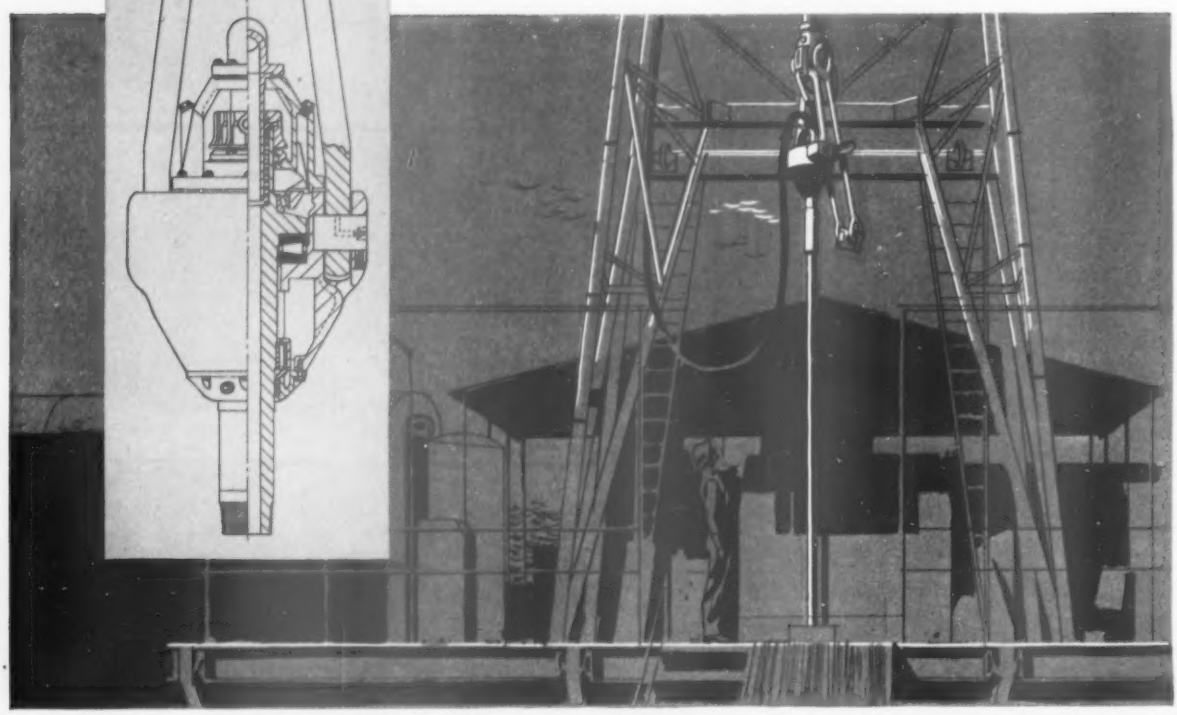
REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department:
Chrysler Building, New York 17, N.Y.

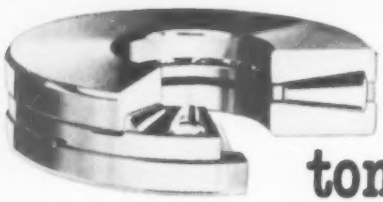
Republic REPUBLIC STEEL **ALLOY STEELS**

TORRINGTON BEARINGS AT WORK



Up to 300 tons of drill string are supported by TORRINGTON Conical Roller Thrust Bearings on the Brewster Model 8-S. TORRINGTON Bearings are also used on Brewster blocks, swivel and rotary tables.





Capacity 300 tons of drill pipe!

The speed and efficiency of your drilling operations literally turn upon the main bearings of your swivels. And those bearings may be called upon to support up to 300 tons of drill string!

TORRINGTON Bearings solve both problems.

Take TORRINGTON Conical Roller Thrust Bearings, for example. These special, heavy-duty bearings are precision-ground from the finest of bearing steels. They are carefully heat treated for maximum load capacity and resistance to wear. The quality of surface finish on both their rollers and raceways is uniformly high.

Thus, like the many other types of TORRINGTON Bearings used in drawworks and slush pumps, crown and traveling blocks, pumping units and rotary tables, Conical Roller Thrust Bearings insure smooth service, long life and minimum maintenance attention.

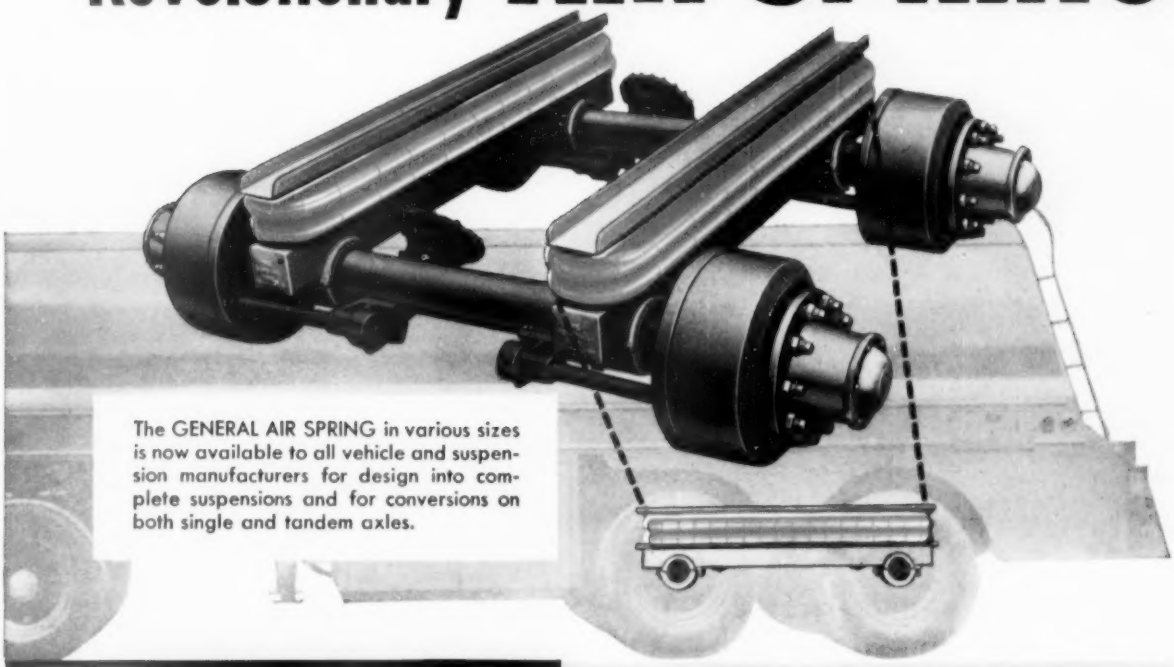
Specify TORRINGTON Bearings for your equipment! It pays!

THE TORRINGTON COMPANY
South Bend 21, Ind. • Torrington, Conn.

TORRINGTON BEARINGS

Spherical Roller • Needle • Tapered Roller • Straight Roller • Ball • Needle Rollers

New— Revolutionary AIR SPRING



The GENERAL AIR SPRING in various sizes is now available to all vehicle and suspension manufacturers for design into complete suspensions and for conversions on both single and tandem axles.

AIR IS YOUR ANSWER TO LOWER COSTS

★ INCREASES PAYLOAD

The General Air Spring permits a savings of approximately 300 pounds more than the average steel suspensions. This allows up to *300 pounds more payload.*

★ INCREASES SAFETY

The General Air Spring assures positive braking action. Equal axle loading is maintained while brakes are applied, giving maximum brake effectiveness. No chatter, hop or bounce . . . loaded or empty.

Automatic air pressure control keeps body parallel to axles eliminating heeling over due to misloading, shifting loads or high crown roads.

★ REDUCES MAINTENANCE COSTS

Automatically measured air pressure fits every load condition from maximum to empty. This results in proper riding deflection, maximum spring efficiency.

Bottoming of springs with resulting strain on axles and frame is eliminated.

The absorption of road shocks and high frequency vibration reduces metal fatigue in frame and body.

Rubber mountings require no lubrication, minimum attention.

★ REDUCES OPERATING COSTS

Controlled, easy ride and positive braking action reduces bounces, excess deflection and skidding. Results in more tire carcass life and slower, even tread wear.

Controlled ride reduces cargo breakage. Eliminates high frequency vibration and reduces damage to perishable goods.

THE GENERAL AIR SPRING

• *For information write: Air Spring Division*

The General Tire & Rubber Co.

AKRON, OHIO

SPECIFY GENERAL AIR SPRINGS ON YOUR NEW EQUIPMENT

Johns-Manville
TRANTEX *polyvinyl* TAPE

- speeds application
- lowers construction cost
- controls corrosion

On field welded joints of mill wrapped pipelines, Johns-Manville Trantex Tape provides an economical and practical way to control corrosion at such critical points.

Trantex is a durable plastic tape that sticks on contact—bonds tightly to the pipe. No heat or heavy equipment is needed in its application—it is easily applied by hand or by simple hand-operated devices. Many users find that Trantex Tape overcomes the problem of getting a uniform coating on welded field joints—speeds application . . . lowers job costs on both small and large diameter underground pipelines. For welded field joints or for repairing damage to enamel, Trantex provides a convenient coating that is economical to apply . . . gives lasting protection against corrosion.

J-M Asbestos Pipeline Felt—used successfully for over 50 years to protect enamel coating against all types of soil conditions—is used also as an outer wrap or shield to protect Trantex in rocky areas.

For further information about Trantex Tape and J-M Asbestos Pipeline Felt, write Special Industries Department, Johns-Manville, Box 60, New York 16, N. Y. In Canada, 199 Bay Street, Toronto 1, Ontario.

BUILDING—*THROUGH BUSINESS*—FOR A BETTER AMERICA!

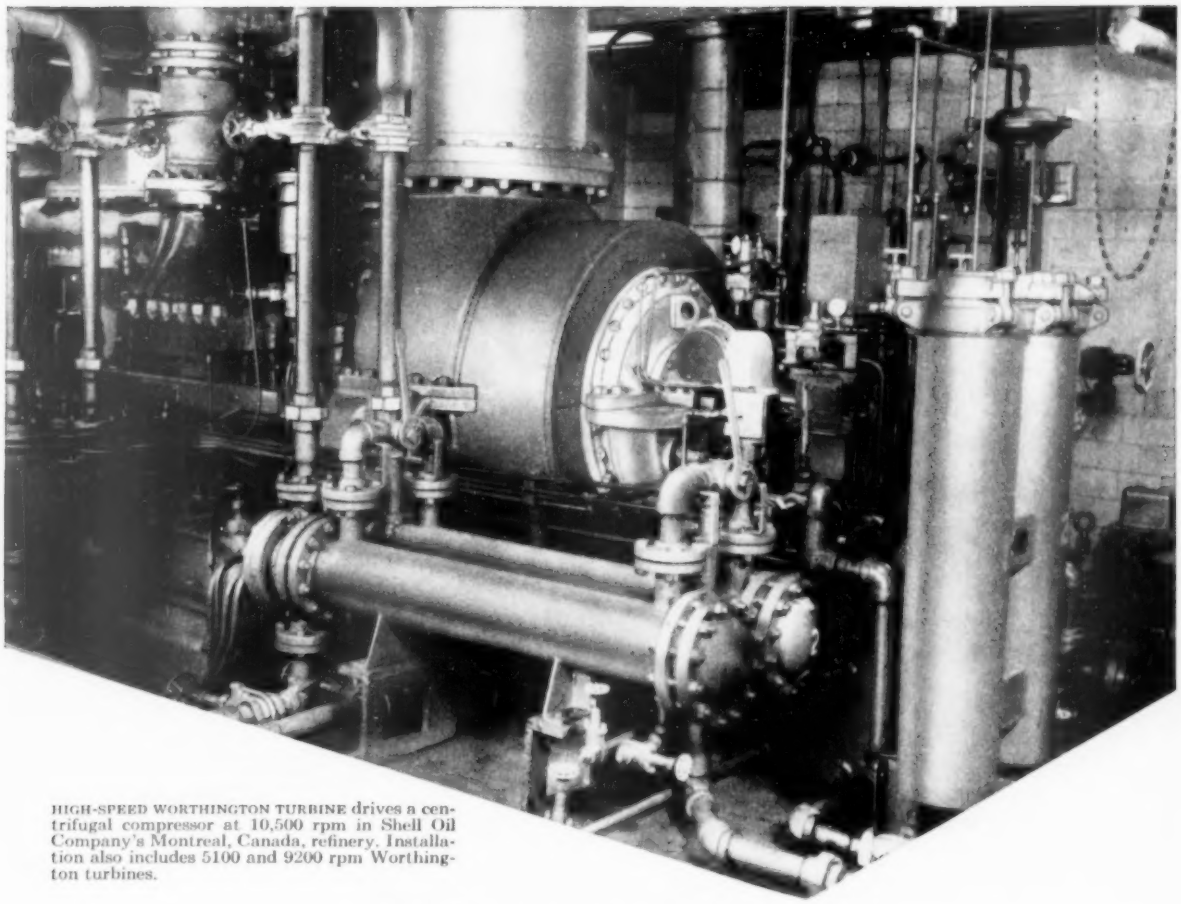
support Junior Achievement

PROPERTIES OF TRANTEX TAPE

	V-10	V-20
1. Physical		
Film	Polyvinyl chloride-acetate	Polyvinyl chloride-acetate
Color	Black	Black
Thickness	.010"	.020"
Tensile Strength	30 lb/in	56 lbs/in
Elongation at Break	250%	300%
Elasticity	Excellent	Excellent
Adhesion, ozs. per inch width	30	20
Temperature Limit	200° F	200° F
Abrasion Resistance	Good	Excellent
2. Electrical		
Dielectric Strength per mil thickness, approx.	1,000 V	1,000 V
Insulation Resistance, greater than (ASTM-D-257-49)	100,000 megohms	100,000 megohms
3. Chemical		
General Resistance to—		
Sunlight	Excellent	Excellent
Acids	Excellent	Excellent
Alkalies	Excellent	Excellent
Corrosive salts	Excellent	Excellent
Water and Salt Water	Excellent	Excellent
Alcohols	Good	Good
Aromatic Hydrocarbons	Poor	Poor
Oils and Grease	Good	Good
Aging	Excellent	Excellent

Johns-Manville TRANTEX *polyvinyl* TAPE

PROTECTS PIPELINES AGAINST CORROSION



HIGH-SPEED WORTHINGTON TURBINE drives a centrifugal compressor at 10,500 rpm in Shell Oil Company's Montreal, Canada, refinery. Installation also includes 5100 and 9200 rpm Worthington turbines.

10,500-rpm turbine is third Worthington Compressor Drive Turbine installed at Shell Oil's Montreal refinery

It was in 1950 that Shell Oil built its new big catalytic cracking unit in Montreal.

And it was three high-speed Worthington steam turbines they chose to drive the very vital blowers and compressors. The 10,500-rpm turbine, like the other two, is so free of vibration that after two years of operation its speed can barely be detected on a vibrating-reed tachometer.

Cat-cracker service requires continuous 24-hour-a-day operation so that reliability is of prime importance. Such operation is typical with Worthington centrifugal compressor and blower drive turbines. But it's not the only reason they're preferred in hundreds of plants outside as well as inside the U. S. A.

With a high-speed Worthington steam turbine you can forget costly speed-increasing gears. You easily set the exact speed needed with various types of control and governing arrangements designed specifically for your requirements. Steam consumption is at a minimum, maintenance requirements are simple.

Write for Bulletin 1966 entitled "High Speed Turbines for Your Centrifugal Compressor and Blower Drives." Worthington Corporation, Steam Turbine Division, Wellsville, New York. T3.11

SINGLE-STAGE TURBINES | MULTI-STAGE TURBINES | TURBINE-GENERATOR SETS | FEED WATER HEATERS | BOILER FEED PUMPS | SURFACE CONDENSERS

Visit the Worthington Exhibit Building — Corner Mid-Continent and Oklahoma Drives. Tulsa Oil Show

WORTHINGTON

Steam Turbines

the fastest way to recover stuck pipe

1. THE DIA-LOG FREE POINT INDICATOR
2. THE STRING SHOT BACK-OFF

1 The Dia-Log Free Point Indicator indicates electronically the deepest point to which *both* torque and stretch can be applied in a string of stuck oil well pipe. Both torque and stretch readings are essential since left-hand torque is always used in subsequent back-off recovery operations.

2 After the exact location of the stuck point has been established, the same electric conductor cable, used for the Free Point Indicator, is employed to run a string shot back-off to the desired depth. Upon detonation, the string shot delivers a sharp jar to initiate the unscrewing of the desired joint.

PROVEN! — BY THOUSANDS OF SUCCESSFUL RUNS

The highly successful use of the Dia-Log Free Point Indicator and the String Shot Back-Off as a combination service has been proved in thousands of runs throughout the Gulf Coast, Mid-Continent, Rocky Mountain and California areas. Wire, write, telephone any Dia-Log Company or Ford Alexander Corporation office for fast, economical recovery of stuck drill pipe, drill collars or tubing.

OIL WELL ELECTRIC LINE SERVICES

THE DIA-LOG COMPANY

P. O. Box 14103 — Houston, Texas

Kilgore, Texas	Odessa, Texas	New Iberia, La.
Great Bend, Kan.	Snyder, Texas	Houma, La.
El Dorado, Ark.	Lubbock, Texas	Corpus Christi, Texas
Oklahoma City, Okla.	Farmington, N. M.	Natchez, Miss.

In California and Rocky Mountains

THE FORD ALEXANDER CORPORATION

P. O. Box 800 — Whittier, California

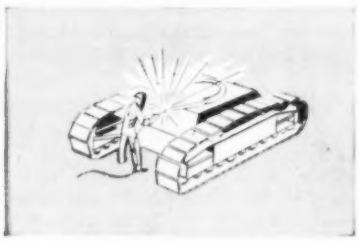
Ventura, Calif. • Taft, Calif.

Before you buy:

SEE 'EM IN ACTION!

TL & MK CONSTRUCTION CO. of Ft. Worth uses seven LS-85's in their pipeline work.

Rugged construction, work-speeding features help you keep pipelining on schedule, costs in line



More live weight—All-welded construction plus proper weight distribution provides extra strength without dead weight . . . resists impact and twist . . . simplifies field service.

WHY are more and more pipeliners specifying Link-Belt Speeders? Well, take the 30,000-lb. capacity LS-85 for example: It delivers 92 net hp at full load speed, has self-cleaning crawler treads, Independent Boom Hoist, not to mention outstanding stability. It's fast, maneuverable, yet takes rugged pipelining with a minimum of maintenance.

Like the LS-85, every Link-Belt Speeder combines quality construction throughout with advanced design to speed your work, give you more per equipment dollar.

If you'd like details on this complete line of crawler, truck or wheel-mounted shovel-cranes, ask your distributor or write for Catalog 2373.

LINK-BELT SPEEDER CORPORATION
Cedar Rapids, Iowa

13,053

LINK-BELT SPEEDER CORPORATION

BUILDERS OF A COMPLETE LINE OF CRAWLER, TRUCK AND WHEEL-MOUNTED SHOVEL-CRANES

FACTORY-TRAINED DISTRIBUTOR SALES AND SERVICE SPECIALISTS ...EVERYWHERE

"Our Dodge Trucks are outstanding in economy and dependability!"

Why new DODGE *"Job-Rated"* TRUCKS are top performers for oil field operations

PULLING POWER THAT'S BUILT TO LAST!

Dodge trucks provide the *right* power with seven great engines—3 all-new—ranging from 100 to 171 h.p. Twin carburetion available on 2½-ton through 4-ton models. And Dodge power is economical, thanks to features like chrome-plated top rings with 4-ring aluminum-alloy pistons, two fuel filters, higher compression ratios, floating oil intakes and many more advantages, designed to reduce upkeep and maintenance costs.

MANEUVERABILITY THAT SAVES TIME!

Shorter over-all lengths, wide front treads and shorter wheelbases give Dodge trucks the greatest maneuverability of any popular make. What's more, Gross Combination Weights are increased by as much as 5,000 pounds for greater payloads. See or call your Dodge dealer soon. He's anxious to show you how to trim plenty from your trucking costs.

. . . say executives of the **Hancock Oil Company,** *Long Beach, California*

"We've used Dodge trucks for twenty years. They average thousands of miles each year and are on the job every day. Yet maintenance work is seldom required. We are completely satisfied with the top performance our Dodges give us. They are outstanding in economy and dependability!"

"Our drivers like Dodges, too. They are easy to handle and maneuver even for rugged off-the-road work. Right now our eye is on the new Dodge models with their greater cubic inch engines. They've got the power we need!"

"Whether on makeshift roads in the oil fields or smooth-surfaced roads, Dodge trucks satisfactorily meet our standards. With our varied operations, we need trucks to fit each job and, large job or small, there's a Dodge truck that meets our requirements."

DODGE
"Job-Rated" TRUCKS

WIRE ROPE, too, resists attack with the RIGHT KIND of muscle

Brawny chest and shoulder muscles make the gorilla a formidable foe in the eternal warfare of the jungle. Defending himself and his family, this 450-pound heavyweight stands erect and fights back with sledge-hammer blows of his mighty forearms.

In wire rope, too, it takes the right kind of muscle to resist constant attack of abrasion, corrosion, bending fatigue, load strain and shock stress.

Complete quality control of Wickwire Rope means that you can always count on the right grade of steel and size of wire; the right construction and lay of the rope for best results on your particular job.

See your Wickwire Rope distributor or contact our nearest sales office.

WICKWIRE ROPE
A CF&I PRODUCT

1221

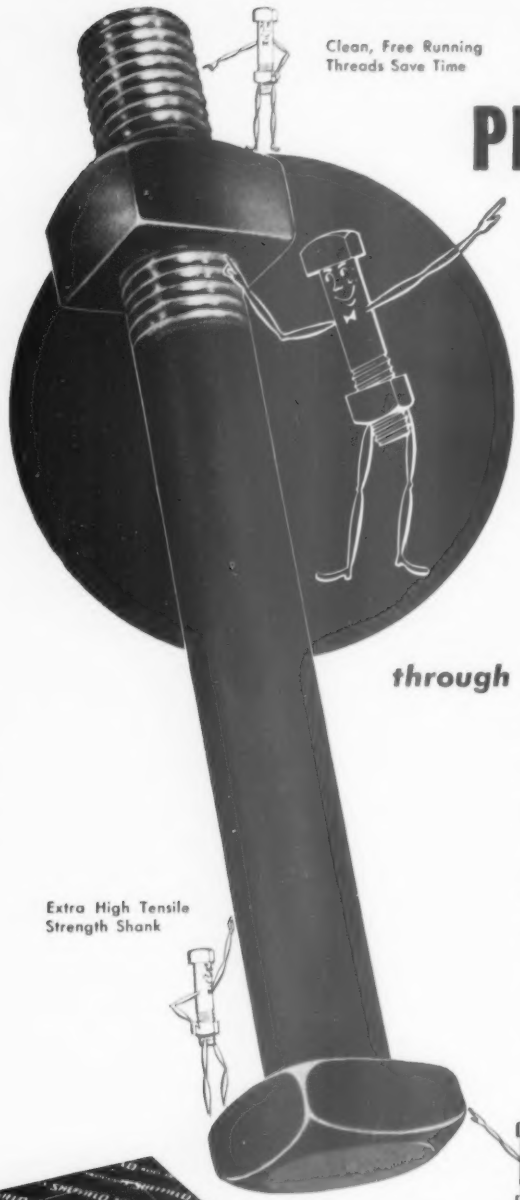
A YELLOW TRIANGLE ON THE REEL IDENTIFIES WICKWIRE ROPE

THE COLORADO FUEL AND IRON CORPORATION — Abilene (Tex.) • Denver • Houston • Odessa (Tex.) • Phoenix • Salt Lake City • Tulsa
THE CALIFORNIA WIRE CLOTH CORPORATION — Los Angeles • Oakland • Portland • San Francisco • Seattle • Spokane
WICKWIRE SPENCER STEEL DIVISION — Boston • Buffalo • Chattanooga • Chicago • Detroit • Emlenton (Pa.) • New York • Philadelphia

WICKWIRE ROPE

CF&I

PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION



Clean, Free Running Threads Save Time

Extra High Tensile Strength Shank

PERFECT TEAMWORK

NUT-TO-BOLT FIT is a matter of close-tolerance precision in Sheffield Bolt and Nut manufacture. That's one reason why Sheffield Bolts give more gripping power; hold stronger, longer.

There IS a BIG DIFFERENCE *in bolts!*

It's STATISTICAL QUALITY CONTROL through Every Step of SHEFFIELD MANUFACTURE

HERE'S UNIFORMITY you can count on—quality you can be sure of—in every bolt, every carton, every shipment. Sheffield quality starts with special analysis steel, and it's rigidly checked and controlled right down the line to the finished product.

HERE'S HOW: Inspection data is recorded at every quality control step in manufacture. This data is analyzed by statistical methods similar to those used in aircraft production. Any deviation from Sheffield's high quality level shows up right now, and is corrected.

PACKAGE APPEAL: Not only for neat display, but for faster and easier identification of sizes and filling of orders, Sheffield's trim new carton is a stand-out. It's a real selling and handling help.

New Eye-Appeal, and Easy Order Filling with this SHEFFIELD HINGED-COVER CARTON

Tough, Precision-Shaped Heads Defy Wrench Slippage

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Regan
Forge & Engineering Co.
OIL FIELD EQUIPMENT

Plant and General Offices
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Dear Friends;

We are happy to announce to the Oil Industry the appointment of our new, exclusive Mid-Continent and Export distributor:

Mid-Continent Supply Co.
Fort Worth, Texas

Mid-Continent was chosen in order to make possible better service on Regan products to our industry. We are sure you will be as happy with our choice as we are.

We're looking forward to seeing you at the show. We'll all be there to assist you in any way possible to solve your oil producing problems.

See you May 13 to 26th in Tulsa.

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Exclusive Mid-Continent and Export Distributor:
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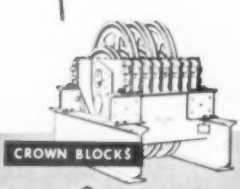

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It takes a Giant to catch a Giant

IT'S always exciting to watch a little guy challenge a big guy—and win. That's why Jack the Giant Killer has topped the list of popular children's stories for centuries. And that's why we think the oil business is the most thrilling business in the world. It's a contest between Men and a modern Colossus.

Not just any men. It takes men of tremendous initiative and daring—giants in their own right—to stalk the reluctant giant, Petroleum, drag him from his lair, civilize him, and put him to work.

Cities Service is well equipped with such men. Geologists who, at great personal hardship, track down the giant in his native haunts. Production men who risk all to bring him out alive. Refinery operations men, who domesticate and train him. Research men, who think of new ways to utilize his strength.

The mammoth muscles of petroleum have taken over some of mankind's hardest, most back-breaking jobs. We think a lot of credit is due the great-hearted Cities Service "Jacks" who've devoted their lives to finding, catching and domesticating this mightiest of modern "Giants."

CITIES SERVICE

Quality Petroleum Products

You use the world's best paint on jobs like this

Of the $65,000 spent to paint this great bridge, less than a third was the cost of the paint itself. That's why it is economical to use the best quality aluminum paint that adds extra years between repaintings.

So much aluminum paint is used for metal and masonry surfaces that special formulas have been developed. Paints made to these formulas last longer, protect better under heat, cold, sun, rain, smoke and fumes.

If you have plants, structures or equipment that need paint, it will pay you to find out more about the kinds of aluminum paints now available. We do not make paint. But, as the leading suppliers of aluminum pigments to paint manufacturers, we want you to get the best results from the aluminum paint you buy.

Write us about your paint problems and we'll tell you what type of aluminum paint to use. We'll also send you a copy of *Painting with Aluminum*. It is packed with facts and answers to all types of industrial painting questions. Write Paint Service Bureau, Aluminum Company of America, 1791-E Alcoa Bldg., Pittsburgh 19, Pa.

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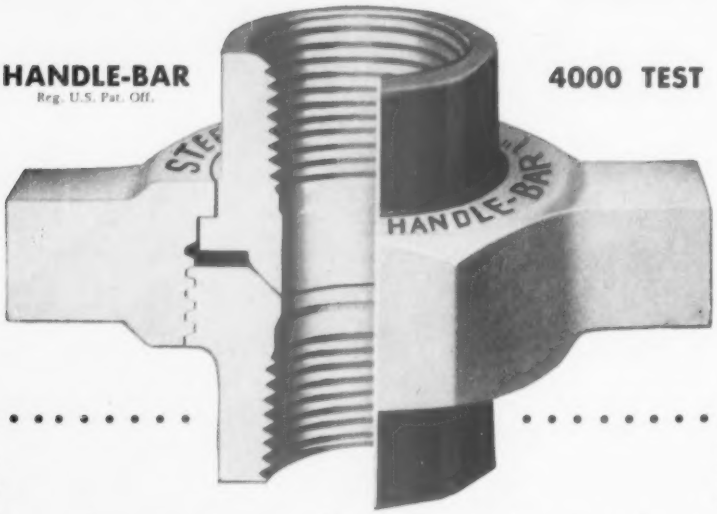
this will SURPRISE you

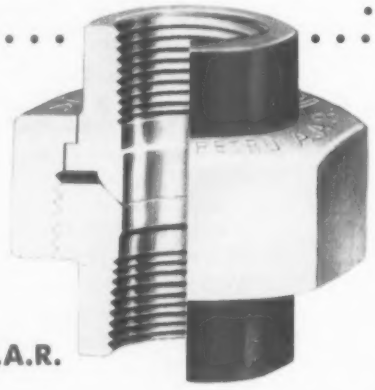
HANDLE-BAR
Reg. U.S. Pat. Off.

4000 TEST



Low test pressure does not mean low price in quick type unions. HANDLE-BAR 4000 Test forged steel unions are priced lower than any 1000 or 2000 Test quick type union. The reason: HANDLE-BAR unions are volume produced from forgings to finished union in our own plant. Check these prices and compare the unions. **2"—$4.77; 2½"—$8.89; 3"—$11.43** and **4"—$16.84.** Sizes ⅜" through 4". Specify HANDLE-BAR and save the difference.

PETRO A.A.R. is hot-forged of A.I.S.I. 1023 open hearth, silicon killed forging steel. It meets all chemical specifications for forged steel pipe fittings. Both seats are machined and the female seat is cold rolled. Nut threads are permanently lubricated with Udylite Cadmium. Specify PETRO A.A.R. for economy and perfect satisfaction.



PETRO A.A.R.
Reg. U.S. Pat. Off.

For additional information about these and other Forged Steel Unions write Department O. for Illustrated Catalog or refer to listings in Composite Catalog pages 3194-3195, Refinery Catalog page 695 and Chemical Engineering Catalog pages 1294-1295.

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ORIGINATORS AND PIONEERS OF STEEL UNIONS SINCE 1912

CLAYTON MARK & COMPANY

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They Say—

Tidelands to States—Pro

"A comparatively tiny Senate minority, composed chiefly of New Dealers, is striving to delay the Senate vote on the pending bill to restore the long-established constitutional rights of the coastal states to the tidelands within their historic borders. Sen. Taft's charge that they are conducting a filibuster is supported by the irrevelance of their oratory . . . In very recent years a court ruling has clouded the states' title—though it avoided any express denial of the state rights established by repeated earlier decisions.

"Two Congresses since have passed acts of restitution and recovery to remove the cloud which power-hungry Washington bureaucrats sought to exploit as a weapon in their fight to destroy or nullify the constitutional division of state and federal rights and powers. Both were vetoed by Mr. Truman. In last year's campaign Gen. Eisenhower pledged to approve that congressional restitution as a matter of justice. His opponent took the New Deal bureaucratic side. That was one of the issues joined in and resolved by the election.

"The present House has passed a restitution bill (for the third time) by a huge bipartisan majority. The New Deal minority in the Senate now seems to be trying to block a vote on the similar Senate bill. It is conceded by all, as we understand it, that the Senate will vote to restore the constitutional rights and title of the states when and if the final roll is called."

Editorial from New Orleans Times-Picayune.

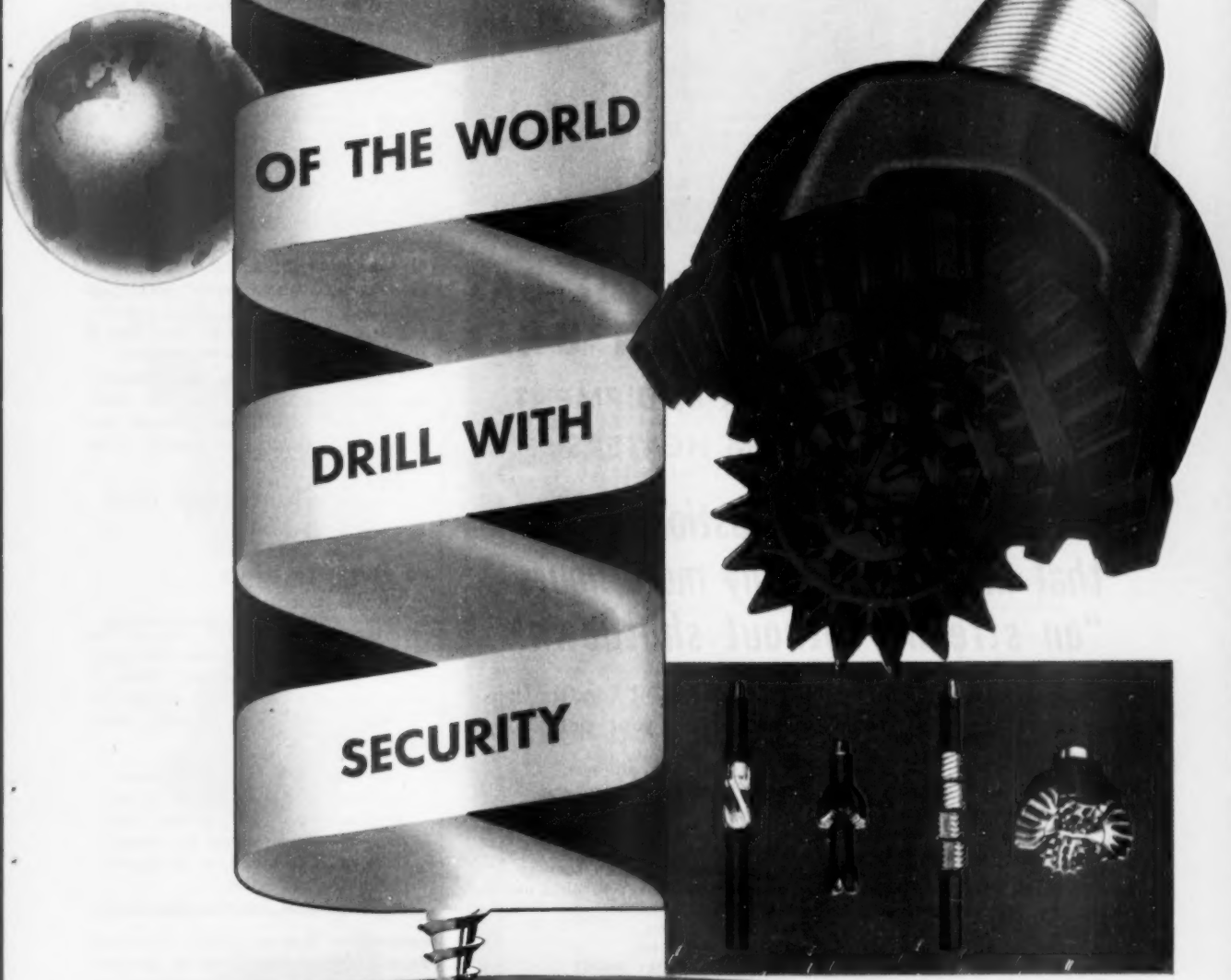
Tidelands to States—Con

". . . One of the greatest and surely the most unjustified give-away programs in the history of the United States is legally taking shape before our eyes. The administration has endorsed in principle, the House has already approved and the Senate within a few days apparently will approve this plan to give the people of a handful of states billions upon billions of dollars worth of undersea oil that rightly belongs—and always has belonged—to the people of the entire nation. . .

"While direct self-interest accounts for the furious fight for the oil waged by Texas, Louisiana, California, and

THE OILFIELDS OF THE WORLD DRILL WITH SECURITY

Hundreds of miles from nowhere, is where good equipment is needed. That's why the oil fields of the world drill with SECURITY. Year after year, drillers from Borneo to Bakersfield—from Argentina to Alberta—recognize that Security equipment gives maximum performance and Security personnel render superior service. Why not get SECURITY in *your* drilling today.



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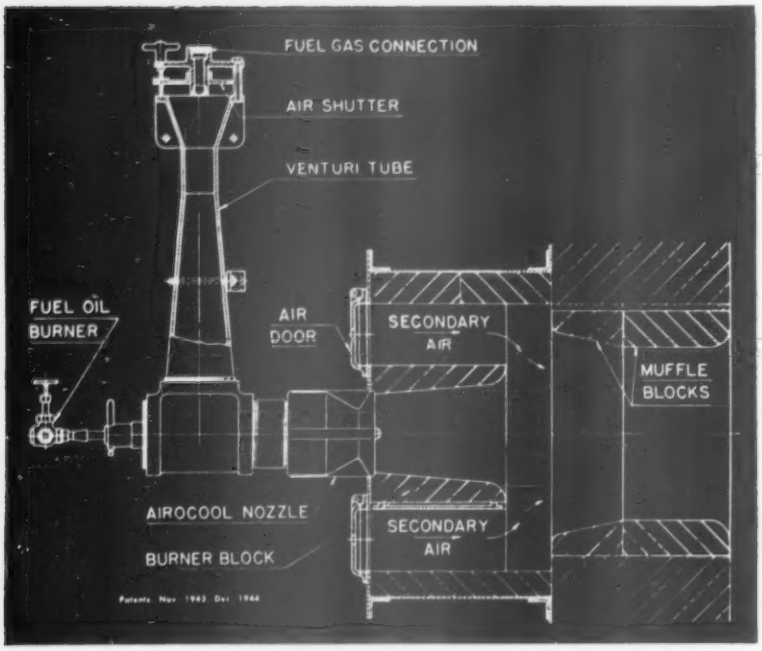

The NATIONAL AIROIL OIL-GAS TANDEM COMBUSTION UNIT

IS NOT MERELY BURNER EQUIPMENT FOR YOUR PETROLEUM HEATERS . . .

. . It's an exclusive Combustion System that has proved many more hours "on stream" without shutdown!

. . . ask us *how* and *why* the NATIONAL AIROIL Tandem Unit assures *longer* "on stream" service from your petroleum heaters.

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SLUDGE BURNERS, Steam Atomizing
OIL BURNERS and GAS BURNERS for industrial power, process and heating purposes
MOTOR-DRIVEN ROTARY OIL BURNERS
MECHANICAL PRESSURE ATOMIZING OIL BURNERS
DUAL STAGE, combining Steam and Mechanical Atomization
LOW AIR PRESSURE OIL BURNERS
AUTOMATIC OIL BURNERS, for small process furnaces and heating plants
GAS BURNERS
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Florida, it is difficult to understand why the representatives of so many other states have joined in to deprive their constituencies—and the nation as a whole—of an immediately valuable possession that rightly belongs to all of us. . .

"The opponents of the bill, led by such careful thinkers as Senators Douglas of Illinois and Lehman of New York, offer a sound alternative in the Anderson bill, which would confirm federal jurisdiction over the offshore oil resources and state jurisdiction over lands beneath tidal and inland waters, and would give the coastal states a percentage royalty on oil taken from within the three-mile limit.

"Under the Hill amendment all money received by the federal Government from leases for oil development would eventually be used 'exclusively as grants-in-aid of primary, secondary and higher eduction.' According to this provision, Senator Douglas estimates that New York, for example, would receive in royalties anwwhere from $500,000,000 to nearly $5,000,000,000, depending on the actual worth of the reserves and the royalty percentage eventually agreed upon. What sums of this order would mean to education in all forty-eight states is self-evident.

"Again we urge the Senate leadership and the administration to think through the offshore oil question and to look at it in terms of benefit to the nation."

Editorial from New York Times.

On Alaskan Possibilities

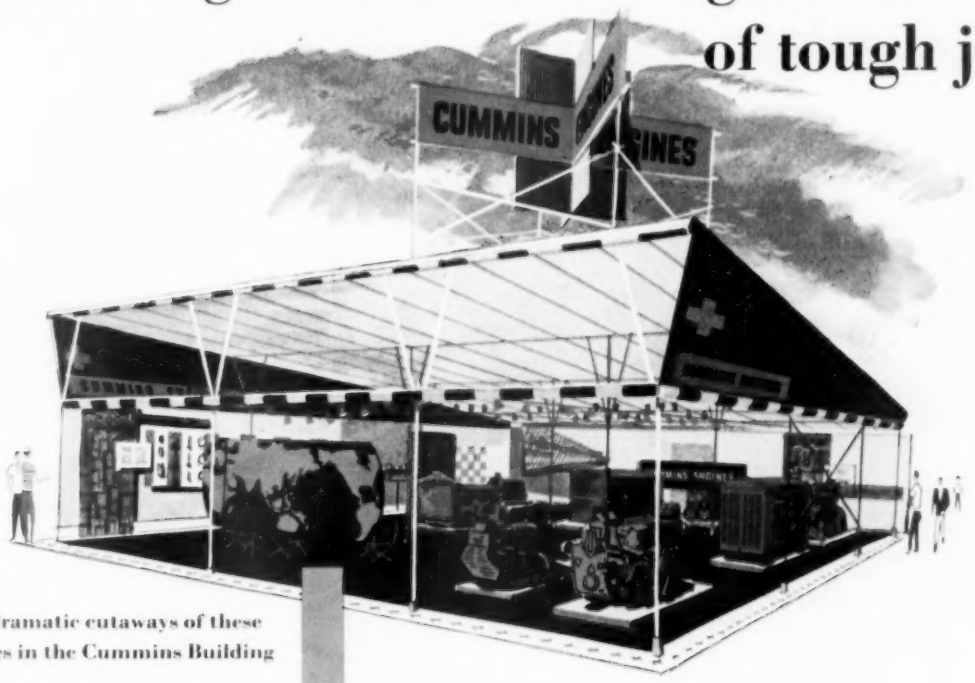
Sir:

In the March 16, 1953, issue of The Oil and Gas Journal appears an article by Bertram F. Linz entitled, "Navy to Quit Alaska." Under the subtitle of, "Pipe-line study" the following statement is made:

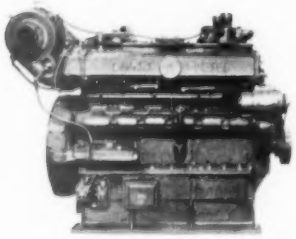
> "Although no oil was discovered in the reserve, the Navy was experimenting with pipe-line construction which would be needed to move it if found, it developed during the discussion."

Although it is felt that the oil discoveries to date in Naval Petroleum Reserve No. 4 could not be economically developed, it is a matter of fact that oil was discovered in three separate areas. The Oil and Gas Journal has carried numerous reports of these oil discoveries. First among these is believed to be an article published in the August 9, 1947, issue—"Full-Scale Exploration Under Way by Navy in Arctic Alaska," by C. O. Willson. Following his visit to Naval Petroleum

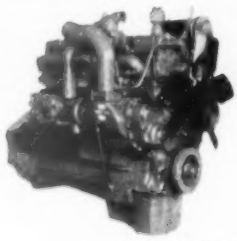
See the engines that make light work of tough jobs



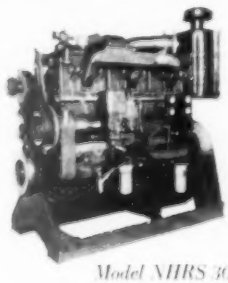
See dramatic cutaways of these engines in the Cummins Building



Model VT-12 Turbocharged 600 h.p.



Model JBS-600 150 h.p.



Model NHRS 300 h. p.

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S. E. Corner Block 201, North Extension... Date: May 14-23

In Cummins Engine Company's new Oil Show building, you can examine at close range the rugged, portable engines that outperform all other engines in their power range (60-600 h.p.).

True: because of careful engineering and building . . . because of advanced research that gave birth to such advantages as Cummins' exclusive fuel system for dependable, economical fuel injection and metering. It's because of these good reasons—and because of the fast service offered by an exclusive parts and service organization—that Cummins Engines are oil field pace-setters *everywhere.*

But get all the facts at the show. Cummins factory and dealer representatives look forward to visiting with you in Tulsa!

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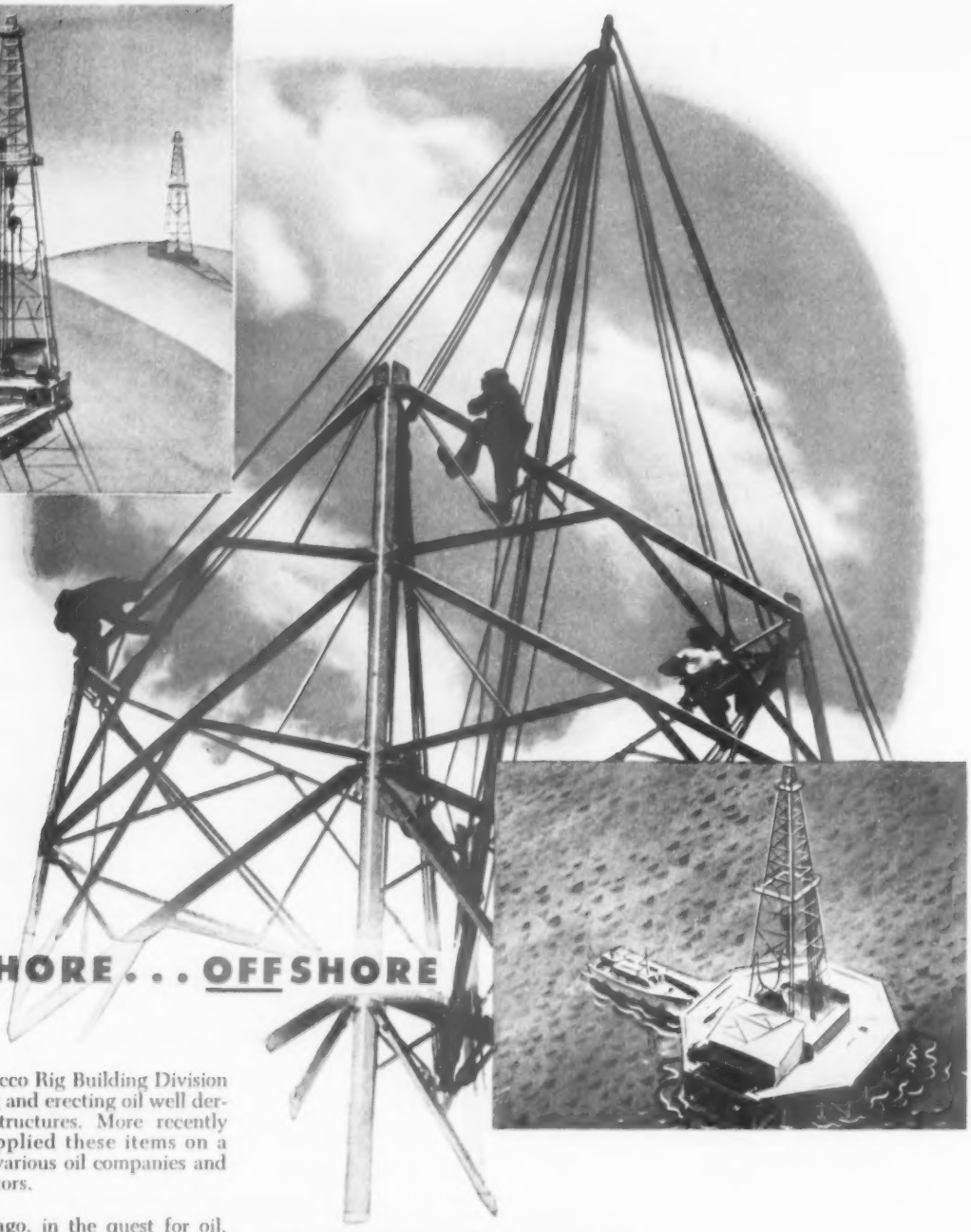

ON SHORE . . . OFF SHORE

Since 1928, Macco Rig Building Division has been selling and erecting oil well derricks and substructures. More recently Macco has supplied these items on a rental basis to various oil companies and drilling contractors.

Some years ago, in the quest for oil, piers were extended out into the Pacific ocean to afford suitable drilling sites for structures which laid offshore. At that time, Macco Corporation became a dominant factor in building the necessary piers and other equipment.

Today, offshore drilling in much deeper Pacific waters is imminent. To enable oil companies to conduct such offshore operations *economically* Macco now offers complete engineering service as well as construction facilities and necessary materials. Consult Macco *today* about your offshore drilling operations *tomorrow*.

MACCO DOES A JOB!

MACCO RIG BUILDING DIVISION

MACCO CORPORATION

14409 South Paramount Boulevard, Paramount, California

RB-3

Reserve No. 4 in July of 1947, Mr. Willson wrote: "Offsetting 2 Umiat is a core test which was drilled to a depth of 540 ft. late last year. This test is credited with the first definite indications of commercial crude oil in northern Alaska. Thirty barrels of oil have been bailed for testing purposes."

Subsequent articles have discussed the discovery of low-gravity oil at Simpson and Fish Creek and gas at Barrow, Meade, Wolf Creek, Gubik, and Square Lake.

We have appreciated your cooperation in the publication of information concerning Naval Petroleum Reserves and regret the necessity of pointing out this misstatement of fact.

R. H. MEADE
Captain (CEC), U. S. Navy
Director, Naval Petroleum Reserves

CALENDAR OF EVENTS

MAY

19-22 The Institute of Gas Engineers, ninetieth annual meeting, London, England.

21-23 Panhandle Geological Society, field trip, Yucca Hotel, Raton, N. M.

24-27 American Gas Association, production and chemical conference, Hotel New Yorker, New York City.

25-28 Air Pollution Control Association, annual meeting, Lord Baltimore Hotel, Baltimore, Md.

25-29 American Society of Mechanical Engineers, annual conference and exhibit, oil and gas power division, Hotel Schroeder, Milwaukee.

27-29 Texas College of Arts and Industries, Kingsville, eighth annual short course in gas technology.

28-29 Western Petroleum Refiners Association, regional technical-industrial relations meeting, Broadview Hotel, Wichita.

28-29 Natural Gas and Petroleum Association of Canada, London, Ont.

29-30 West Texas Geological Society spring field trip, Paisano Hotel, Marfa, Tex.

JUNE

2- 3 American Petroleum Institute, Division of Production, Pacific Coast District, Statler Hotel, Los Angeles.

4- 5 Kentucky Oil and Gas Association, annual meeting, Lafayette Hotel, Lexington, Ky.

7-12 Society of Automotive Engineers, summer meeting, The Ambassador and Ritz-Carlton Hotels, Atlantic City, N. J.

14-18 Canadian Gas Association, Windsor Hotel, Montreal, Canada.

15-19 American Institute of Electrical Engineers, summer general meeting, Chalfonte-Haddon Hall, Atlantic City.

15-19 American Association for the Advancement of Science, petroleum

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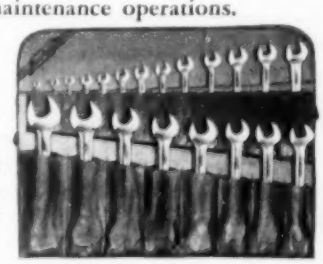
"Blue-Point Supreme"
Open End WRENCHES

For jobs like this—or where nuts are set in recesses too narrow for other types of wrenches—Snap-on open end wrenches are the strongest, safest made. Every detail of design—the tough alloy steel—precision machining—heat treatment and finishing—are highest quality. In the hands of your workers Snap-on wrenches will contribute greater efficiency to assembly and maintenance operations.

OE-821-K.
21 WRENCH SET
in kit as illustrated. Contains all standard sizes, ¼" to 1⅜". Most sizes duplicated on different handles to meet requirements of many jobs. Complete set, $56.60.



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All the advantages that have made Reynolds Aluminum Industrial Corrugated a sweeping success throughout industry...rust-proof permanence, lowest maintenance, high insulation...now at even lower installed cost and with improved appearance! With these new 48" sheets, side laps take 30% less metal, 30% fewer fasteners...and there are 30% fewer sheets to handle. With the new stipple-embossed finish, the wider-spaced laps tend to disappear...making a handsome, uniform, textured effect. Call on Reynolds for literature, technical and application details.

DESCRIPTION:

METAL THICKNESS: 0.032 inch (22 U.S. Std. Ga.)

FINISH: Embossed.

LENGTHS: 5', 5' 6", 6', 6' 6", 7', 7' 6", 8', 8' 6", 9', 9' 6", 10', 10' 6", 11', 11' 6", 12'. (Special lengths cut to order subject to inquiry.)

WIDTH: Over all width 48 1/3", nominal coverage 45 1/3", 1 1/2 corrugations side lap.

CORRUGATION: Pitch 2.667" center to center, depth 7/8", 18 crowns, 18 valleys, one edge up, opposite edge down.

WEIGHT: 56 pounds per 100 square feet of formed sheet.

Standard .032" mill finish Industrial Corrugated also available—35" width, same lengths as above.

Offices in principal cities. Check your classified phone book for our listing under "Building Materials." Or write Reynolds Metals Company, Building Products Division, 2023 South Ninth St., Louisville 1, Kentucky.

See us at Booth No. 95, International Petroleum Exposition in Tulsa.

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SEE "Mister Peepers," starring Wally Cox, Sundays, NBC Television Network. **HEAR "Fibber McGee and Molly,"** Tuesdays, NBC Radio Network.

conference, Colby Junior College, New London, N. H.

15-19 American Petroleum Institute, Division of Production, midyear committee conference, Hotel William Penn, Pittsburgh.

16-19 American Welding Society, national spring technical meeting, Shamrock Hotel, Houston.

JUNE 16-
JULY 2 Intensive Course and Research Conference on Phase Behavior of the Hydrocarbons, University of Michigan, College of Engineering, Ann Arbor.

18-19 Western Petroleum Refiners Association, regional technical-industrial relations meeting, Conrad Hilton Hotel, Chicago.

18-19 Pennsylvania Grade Crude Oil Association, annual meeting, Hotel William Penn, Pittsburgh.

18-20 National Society of Professional Engineers, annual meeting, Sheraton-Beach Hotel, Daytona Beach, Fla.

24-27 Intermountain Association of Petroleum Geologists, fourth annual field conference, Ben Lomond Hotel, Ogden, Utah.

June 28-
July 2 Petroleum Equipment Suppliers Association, annual meeting, Broadmoor Hotel, Colorado Springs, Colo.

JUNE 29- American Society for Testing Ma-
JULY 3 terials, annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J.

JULY
July 30-
Aug. 1 Wyoming Geological Association, eighth annual field conference, University of Wyoming, Laramie.

AUG.
17-19 Society of Automotive Engineers, international West Coast meeting, Georgia Hotel, Vancouver, B. C., Canada.

18-21 American Institute of Electrical Engineers, Vancouver Hotel, Vancouver, B. C.

24-26 Appalachian Gas Measurement Short Course, West Virginia University, Morgantown, Va.

SEPT.
6-11 American Chemical Society, national meeting, Conrad Hilton Hotel, Chicago.

9-11 Pacific Coast Gas Association, San Francisco.

11-12 Association of Desk and Derrick Clubs of North America, annual meeting, Cosmopolitan Hotel, Denver.

13-16 American Institute of Chemical Engineers, Fairmont and Mark Hopkins Hotels, San Francisco.

15-16 American Petroleum Institute, executive committee, Greenbrier Hotel, White Sulphur Springs, W. Va.

16-18 National Petroleum Association, annual meeting, Hotel Traymore, Atlantic City, N. J.

21-25 Instrument Society of America, national instrument conference and exhibit, Sherman and Morrison hotels, Chicago.

24-25 Western Petroleum Refiners Association, regional meeting, Henning Hotel, Casper.

27-30 American Society of Mechanical Engineers, annual conference, petroleum division, Rice Hotel, Houston.

28-29 Independent Natural Gas Association of America, Shamrock Hotel, Houston.

If your'e scanning the OIL AND GAS JOURNAL *for help on insulating problems . . .*

HERE'S ONE GOOD ANSWER

BALDWIN-HILL

Mono-Block

There's more to insulation than heat *savings*. Insulation also makes heat easier to *control*. But what type is needed to help produce maximum results? B-H MONO-BLOCK is one good answer because it is effective over the full temperature range to 1700° F. . . . is used on steam boilers, tanks, towers, ovens and similar equipment where accurate control is essential to efficient operation. B-H MONO-BLOCK of fibrous rockwool provides stability under severe temperature and moisture conditions. It is light and easy to handle—and readily cut into straight or irregular shapes for speedy application. If you have any problems involving heat conservation or control—consult our Engineered Insulation Service.

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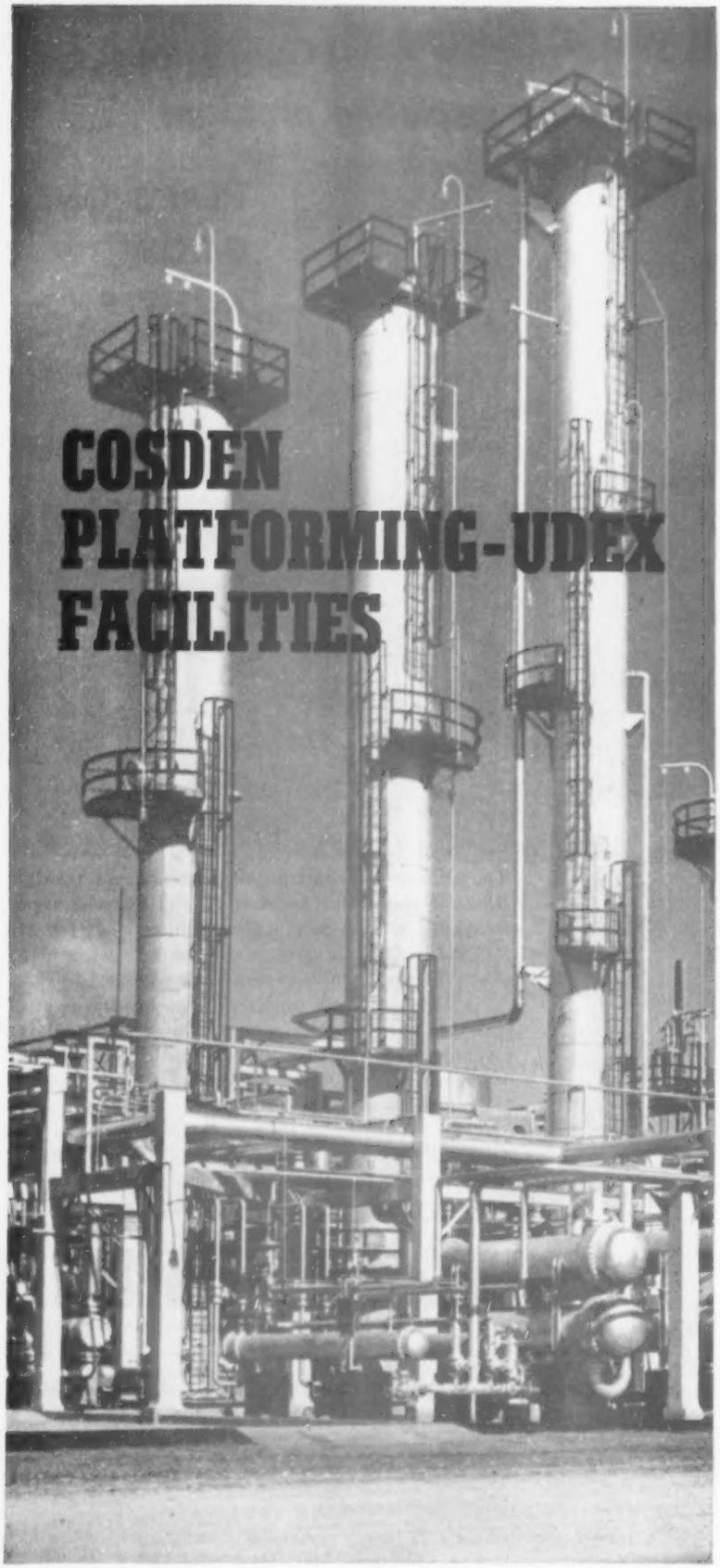
- ☐ BLANKETS . . . Metal-reinforced, flexible, felted black rockwool insulation
- ☐ NO. 1 INSULATING CEMENT . . . All-purpose, rust-inhibiting plastic cement



Platformer-Udex Gives Cosden Superior Benzene

By R. L. Tollett, President
Cosden Petroleum Corporation

Benzene of exceptionally high quality which easily meets nitration grade specifications is being turned out consistently by the new Platformer-Udex combination at our Big Spring, Texas, refinery.

R. L. Tollett

Not only is the superior quality of this aromatic being maintained, but top-grade toluene and xylenes also are being produced by the new unit. This enviable situation has been brought about without sacrificing the quality of our premium gasoline of which we are so proud.

Production of the nitration grade aromatics marks a colorful milestone in the history of Cosden Petroleum Corporation, and is part of a major expansion program aimed at diversification of products. After a careful study of the potential market for aromatics, we reached a decision to launch this new program. The most important factor we had to consider was how to produce and separate these aromatics while maintaining our production of premium quality gasolines. This required upgrading the heavy 270-400 degree F. naphtha fraction remaining after processing of the 150 degree F. to 270 degree F. fraction for aromatic production.

Choose Platformer-Udex

Once the decision was made to produce the three aromatics, we faced another problem—that of finding the process best suited for the double-barreled job we wanted to do. After exhaustive investigation, our engineers were convinced that Universal Oil Products Company's Platforming Process and the Udex Process originated by Dow Chemical Company and engineered and licensed by UOP formed the perfect solution to our needs.

Procon Incorporated of Des Plaines, Ill., was selected to construct the Platformer-Udex combination. Procon completed the job in eleven months, and also built accessory processing equipment, roadways, and buildings. I am happy to report that all work was done with maximum efficiency, and labor costs for the entire job fell quite a bit below preconstruction estimates.

Our decision to install the Platformer-Udex has paid rich dividends from the very first day it went on-stream, September 14, 1952.

Since the Platformer went on-stream, it has made a number of cycles on the blocked-out operation which was set up by Universal's engineers, and the

catalyst activity has been uniformly high. The first run is still in progress at a current catalyst life of 55 barrels a pound.

Cosden is processing a mixture of West Texas crudes totaling 22,500 barrels a day. The technical aspects of our new unit's operations are, I believe, of wide-spread interest and I would like to outline them here.

How Units Operate

The total straight run gasoline is fractionated in a series of three towers to prepare the individual naphtha fractions as feed for the Platforming unit and to stabilize the light fraction of the straight run.

A depentanizer is the first tower in the feed preparation section, and it takes overhead the pentane and lighter fractions which are then sent to the light straight run stabilizer for depropanization. The bottoms from the depentanizer are then pumped to a charge splitter which separates the depentanized straight run gasoline into an overhead 150 degree F. to 270 degree F. fraction and a bottoms 270 degree F. to 400 degree F. fraction. The individual fractions are then sent to intermediate floating roof storage from whence they are charged to the Platforming unit.

On the alternate Platforming unit operating cycle for motor fuel production the unit is fed with the heavy naphtha cut of 270 degrees F. to 400 degrees F. boiling range. Balancing the motor fuel operation with the aromatics operation and processing the available naphtha, the charge to the unit during the motor fuel operation has been approximately 4,500 barrels a day.

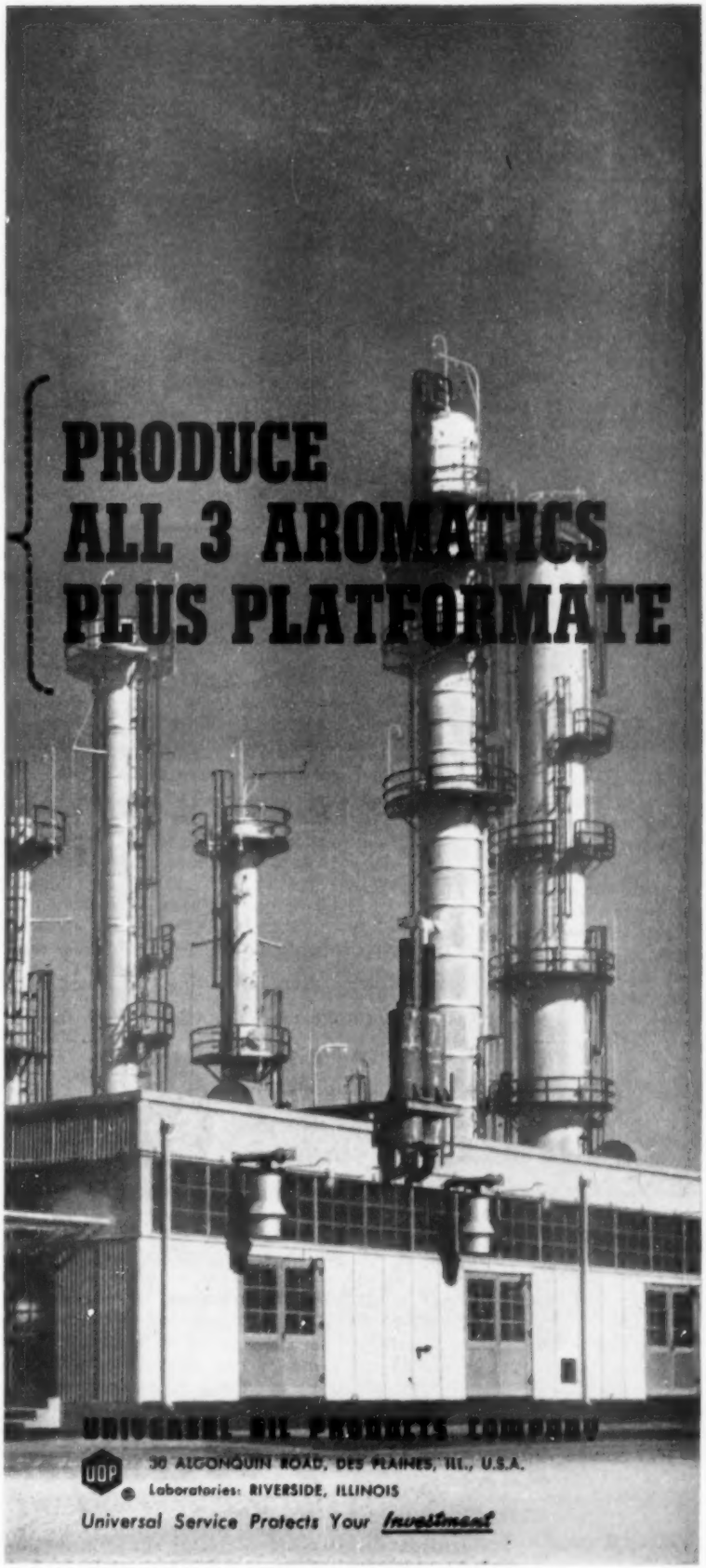
Motor fuel operating conditions have been controlled to the point where they produce a stabilized Platformate having a leaded F-1 octane number of 95 to 95.5. We have found that the yield of stabilized Platformate at this octane number level has been 94.5 to 95.5 volume per cent of the charge.

High Aromatic Yield

When the Platforming unit is operating to produce aromatics for charging to the extraction unit, it is charged with the 150 degree F. to 270 degree F. prefractionated stock from storage. The average charge rate during the aromatic operation to balance the time schedule on the blocked-out operation and to consume the available charge stock has been about 3,300 barrels a day.

We have discovered from tests made on the charge and product from this operation that the yield of total aromatics is 94.5 per cent of the aromatics present in the charge and corresponding to the naphthenes in the charge.

The Udex unit has been running continuously since September 14, charging the aromatic product from the Platforming unit at a rate averaging 1,600 barrels a day.



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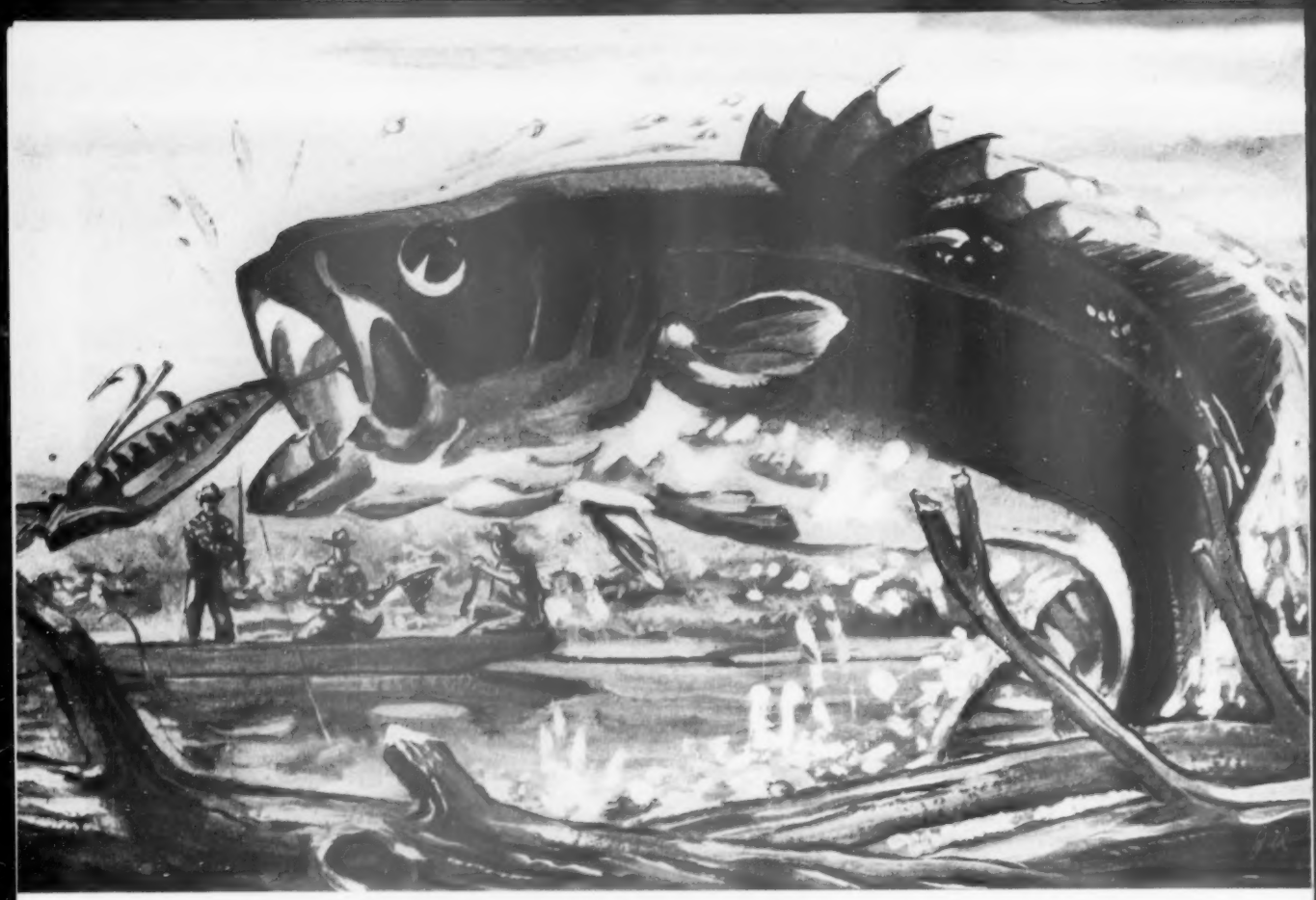

YOU'VE GOT TO REACH OUT LONG TO STIR UP THE BIG ONES

You have probably caught fish with some ordinary, everyday casting, but don't you always feel a hunch that your chances of hooking a big one are better when you get a long, straight cast? And don't you feel somewhat the same about casing perforating? If only you could be *sure* of deep, clean *penetration*, your well operations could go ahead with greater confidence and certainty.

Many well operators have eliminated uncertainty in casing perforating by standarizing on the modern Welex JET method for *all* perforating jobs. The deep, clean, positive penetration attainable only with JETS gives you consistently greater productivity and lower overall production costs. Results cost less with Welex JETS. Call your nearest Welex station for prompt service day or night.

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THE OIL AND GAS
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TULSA, OKLAHOMA

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JOURNALLY Speaking

On the Surface

RECENTLY we attended a meeting devoted to oil recovery.

At one session some German engineers described oil mining in their country—how men dig down to the oil sand, hack out the rock with picks and shovels, and take it to the surface to boil out the oil.

At other sessions American engineers told how they get oil out of stubborn formations without ever going below the surface—by flooding with water or gas, by hydraulically fracturing the formations, and by other applications of ingenuity, equipment, and scientific study of reservoir characteristics.

The contrast was unmistakable—the Old World versus the New World, Man versus Machine.

Europeans do things the hard way—by hand. Their approach is simple and direct: i.e., there's oil in the ground, so dig it out, just as men have delved for the earth's resources ever since the first cave men scratched for flint.

Americans are lazier—if you want to call it laziness. They lie awake nights trying to figure out how to get things without working, and they go to tremendous trouble and expense to develop machinery to do their work for them.

So in oil, Americans have never gone below the surface, physically. They stay up in the bright sunshine and pure air while only their minds and their instruments probe the bowels of the earth. But they get the oil. Compare America's oil production with Europe's. And note that it is American imagination and American equipment that produce more than 90 per cent of the world's oil.

Americans are accused of waste and prodigality, and often with reason. We may not be getting quite as much oil out of a cubic foot of sand as the Germans do by mining it, but by our lazier methods we get more oil than we can consume, and we get it cheaper. And we aren't wasteful of our human resources. By avoiding pick-and-shovel toil, we free our manpower to think up still more ways of getting what we want by the triumph of mind over matter, by making science and equipment do our work for us.

Tools of the Trade

THESE thoughts about the superiority of machinery over muscle are doubly impressed on us as we wander through the Oil Show grounds this week.

All around are acres of displays of equipment and instruments for finding, producing, transporting, and processing more oil more economically, which is another way of saying with less human toil. The amount of ingenuity and research which have gone into this equipment is astounding.

This has been going on for a generation and more. Outwardly the Oil Show is just about like the one 5 years ago, or 30 years ago. But actually it is an entirely new show. Tremendous strides are being made in oil's technology, and they show up in the equipment which the industry uses.

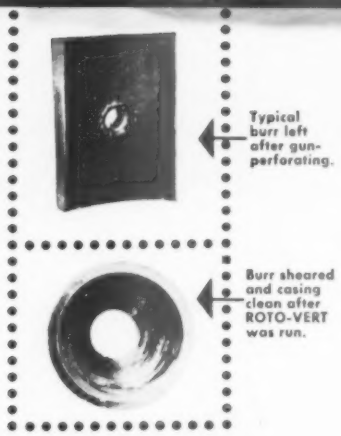
These are the tools of the trade—a far cry from the shovels and wooden tubs with which oil was first produced. It takes a double-domed engineer to figure out a lot of these devices, yet most of them can be put to work by operators with only moderate training.

We Love Equipment

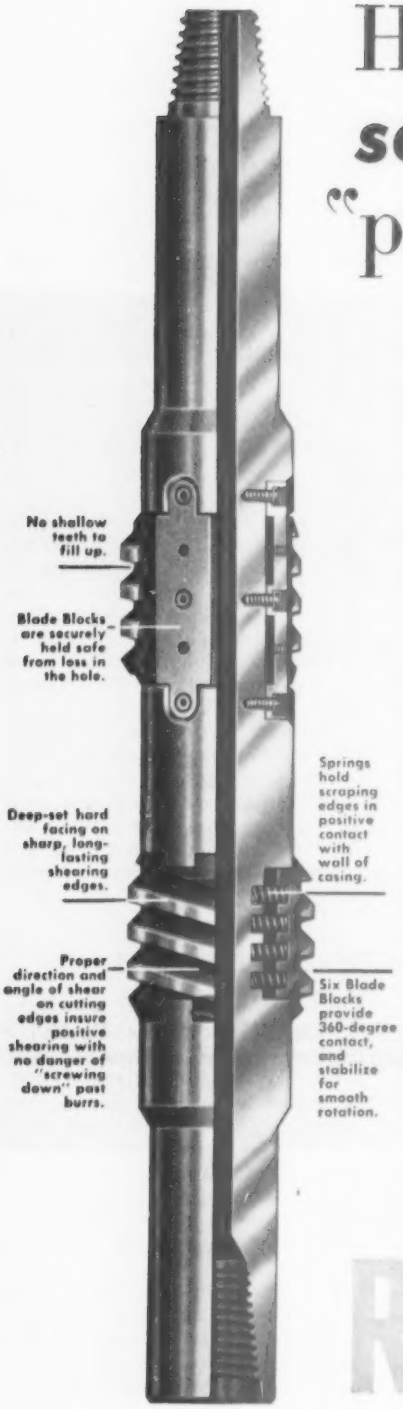
WHAT you are reading now is the biggest issue of the Big Yellow Book ever printed—522 pages including covers but not counting the inserted map of the Oil Show grounds. And next week's book—I.P.E. Issue No. 2—will be on the hefty side, with 322 pages. That makes a total of 842 pages printed in 2 weeks, which is quite a chore for a little country printing plant way out in the old Indian Territory.

And practically all of those pages are devoted to telling about the equipment used by the oil and gas industry. Which is just another indication of how big and how complex and how fast-moving this business is.

Henry D. Ralph



Here's why
SCRAPING YOUR CASING
"pays off"


No shallow teeth to fill up.
Blade Blocks are securely held safe from loss in the hole.
Springs hold scraping edges in positive contact with wall of casing.
Deep-set hard facing on sharp, long-lasting shearing edges.
Proper direction and angle of shear on cutting edges insure positive shearing with no danger of "screwing down" past burrs.
Six Blade Blocks provide 360-degree contact, and stabilize for smooth rotation.

Unless the inside of your casing—the vital "working surface"—is clean and smooth, there is always a possibility of trouble in future operations. Burrs from gun-shot perforations, hardened cement or mud, and even mill scale are all dangerous when the time comes to run testers or swabs, or to set retainers or packers of any description.

The Baker Model "C" ROTO-VERT Casing Scraper removes undesirable obstructions from the inside of the casing, leaving it clean and smooth. Burrs or imbedded bullets are sheared away; cement, mud and scale are scraped away, so that any down-hole work can be safely done at once, or during the years to come.

SCRAPE WHILE DRILLING OUT

The ideal time to use the ROTO-VERT Casing Scraper is during the drilling out of cement, at which time it is run as a "follow-up" behind the bit. Thus in a single run you can also remove all hardened cement, mud, burrs and scale which might later damage swabs or testers, and cause packers or retainers to set prematurely—or never set at all.

EASY TO RUN—LOW-COST RENTAL

The Baker ROTO-VERT Casing Scraper is simple to run, and will effectively clean the inside of the casing *when either rotated or reciprocated* (vertical action). No service man is required, and the low rental cost is paid for many times over by freedom from future damage to bailers, swab rubbers and packers, as well as by the elimination of future delays and re-running expense.

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BAKER

ROTOVERT

CASING SCRAPER

PRODUCT NO. 620-C

You can see here how oil makes progress

TRYING to divide credit for petroleum's progress between oil operators and equipment manufacturers is like the age-old argument over which came first, the hen or the egg. The fact is that the two go together like a hand in a glove.

Visual evidence of this is the International Petroleum Exposition now in progress in Tulsa. It is an equipment fair and a public display of oil's technological progress, all woven together inextricably. This is as it should be, for oil would not be so plentiful and so low in price if it were not for the truly marvelous equipment used throughout the industry, and the equipment would not be available if it were not for the operators' constant search for better and more efficient methods.

TO those who attended the last I.P.E., 5 years ago, the progress in equipment during the interim is striking. There are bigger, heavier, stronger, and more portable units on display this year, but that is not the main feature.

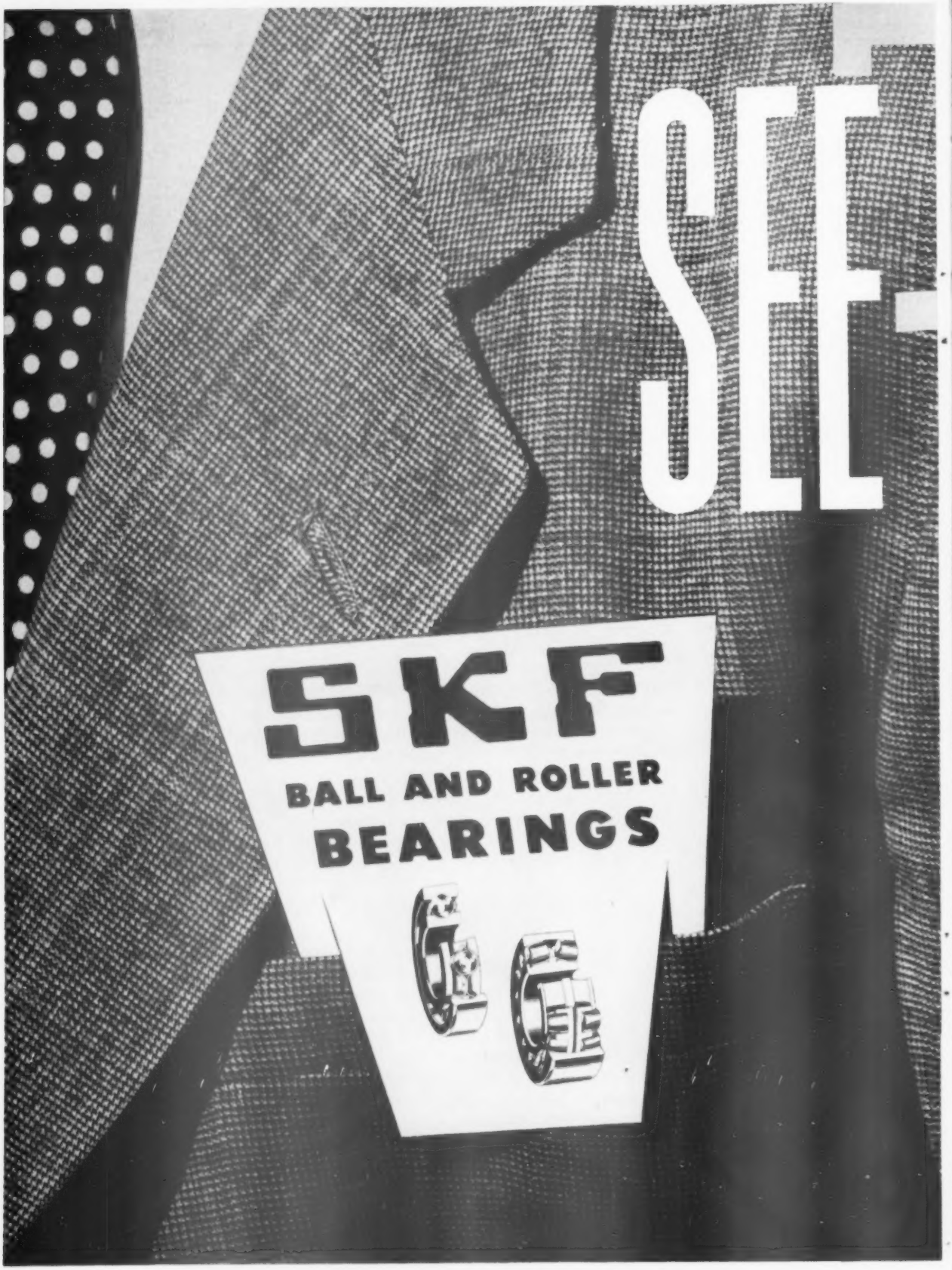
What stands out most is the way in which the oil industry snatches up and adapts to its own requirements the newest developments in every branch of science. Electronics, atomic radiation, plastics—all in their infancy 5 years ago—are in evidence everywhere in this year's show. Metals and alloys, rare or unheard of a few years back, find indispensable places in today's oil equipment.

Perhaps the most striking development is in precision control. The range of ingenious automatic instruments and remote-control devices suggests that the oil industry may be only on the threshold of the age of instrumentation or even automation. They open concepts of precision operations and the elimination of human effort and human error in many oil-industry activities which were undreamed of a few years ago.

IS it a misnomer to call it a petroleum exposition when it really is an equipment show? Not at all. For oil equipment is as much a part of the oil industry as oil itself.

The measure of human progress is the reduction of manual toil and drudgery and the expansion of more comfortable, better living. By this measure oil has contributed mightily to man's progress. But this has been made possible only through the same sort of progress within the oil industry—which has been achieved by the scientific thinking of oil operators and equipment designers working as a team.

This country will never run out of oil as long as we don't run out of the kind of brains which produced the things on display at the oil show.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BALL AND ROLLER
BEARINGS

THE MAN WHO WEARS THIS BADGE

AT THE

International Petroleum Exposition

TULSA **MAY 14–23** **BOOTHS 67 and 68**

He will help you put the right bearing in the right place

SEE how SKF Field and Home Office Engineering is solving anti-friction problems in all kinds of oil field equipment.

SEE a demonstration of the System of Hydraulic Mounting and Removal developed and pioneered by SKF.

SEE SKF's all-purpose bearing line which serves virtually every oil equipment need.

SEE how quickly and easily SKF split housing pillow blocks can be assembled.

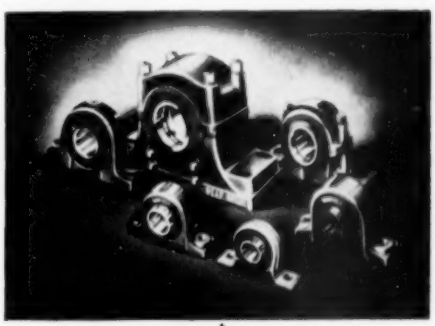
SEE the completeness of SKF's pillow block line . . . machined to rigid standards . . . properly proportioned, with accurate bearing seats.

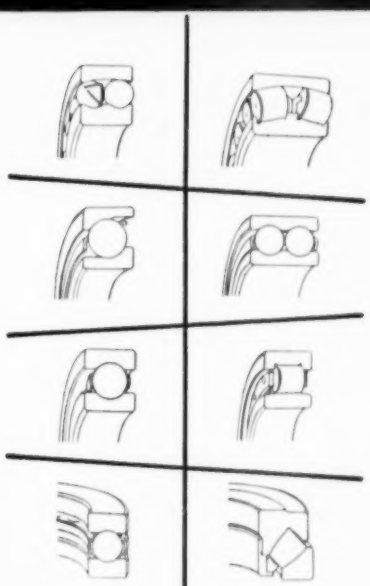
DO THESE THINGS at the International Petroleum Exposition, May 14 - 23, at Tulsa, Booths No. 67 and 68.

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA. — *manufacturers of* SKF *and* HESS-BRIGHT *bearings.* 7423

SKF®

BEARINGS AND PILLOW BLOCKS





SKF'S COMPLETE LINE OF ANTI-FRICTION BEARINGS AND PILLOW BLOCKS, PLUS SKF ENGINEERING CO-OPERATION, HELPS YOU *PUT THE RIGHT BEARING IN THE RIGHT PLACE.*

SANDFRAC* CAN BE TAILORED TO FIT FORMATION TRAITS

Sandfrac by DOWELL provides effective fracturing in formations having low solubility

*SANDFRAC—a service mark of Dowell Incorporated

Sandfrac is one of the methods developed by Dowell to fracture low-solubility formations. It is a versatile fracturing service. The special refined oils and propping agents used in Sandfrac can be tailored to fit the characteristics of almost any well.

The sands used in Sandfrac treatments are available in several sizes. To make this service even more effective, Mud Acid is frequently used before a Sandfrac treatment to lower the pressure in a tight formation.

Perhaps a Sandfrac treatment can make your marginal wells into good producers as it has for other operators.

Here are some examples of the results of Sandfrac treatments performed by Dowell:

Production from a well in a sand formation was increased from 6 to 288 BOPD; another well in a sand formation went from a show to 336 BOPD; and a well completed in a conglomerate formation went from a show to 672 BOPD.

Call the Dowell station nearest you. Ask for the facts on Sandfrac. An experienced engineer will be glad to call on you to discuss this or any of the many other oil field services made available to you by Dowell. However, if you prefer, you can write directly to Tulsa, Dept. E-11.

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"First in Oilfield Acidizing . . . Since 1932"

Look to **DOWELL**
FOR OIL INDUSTRY CHEMICAL SERVICE

THIS WEEK

WORLD'S BIGGEST DISPLAY of petroleum-industry equipment is shown here in this helicopter view of the International Petroleum Exposition, taken by a Journal photographer before the gates were opened to oil men from throughout the world. This view is looking east from the western end of the 26-acre grounds. At lower left is the Hall of Science building.

GOVERNMENT.—House accepts Senate version of bill restoring ownership of the tidelands to the states and sends it to the White House for signature. . . . Next step is bill to provide for administration of Continental Shelf beyond the disputed lands. . . . Fight for restrictive quotas on oil imports reaches climax as opposing industry forces testify before House ways and means committee. . . . Independents say imports are cutting drilling activity, limiting domestic production, threatening industry's future. . . . Importers declare oversupply of crude is temporary and part of regular shortage-and-surplus cycle. . . .

PROCESSING.—Shell Oil Co. begins operation of new integrated U.O.P. Platformer-Shell Aromatics Extractive Distillation plant at its Pasadena, Tex., refinery. . . . Platformer is termed world's biggest. . . . M. W. Kellogg Co. licensed by Sinclair Oil Corp. and Baker & Co., Inc., to offer new catalytic reforming process employing new RD-150 catalyst developed by the latter two firms. . . . American Mineral Spirits Co., Pure Oil Co. subsidiary, contracts with A.S.P.P.A. to build 1,450-bbl. alkylation plant at Pure's Toledo refinery. . . . Premier Petroleum breaks ground for new 3,000-bbl. fluid cat cracker at its Fort Worth refinery. . . .

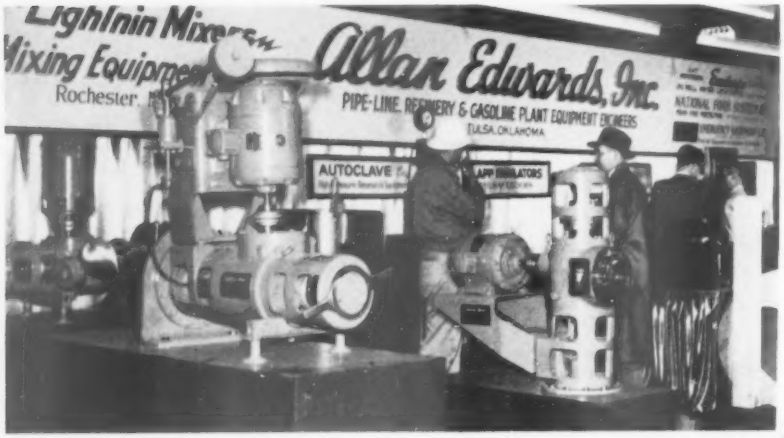
INTERNATIONAL.—Egypt puts new oil law into effect, but companies not enthusiastic over exploration possibilities in the country. . . . Amendments soften pending law governing oil in Brazil, but it still is a virtual government monopoly as bill now stands. . . . Deepest well outside the United States, a Shell wildcat in Venezuela, bottomed in basement rocks at 17,537 ft. and now is testing. . . . Anglo-Iranian files suit in Japan asking that cargo of Iranian oil be impounded as "stolen property." . . . International well in Colombia may be important strike. . . .

ACTIVITY.—Production of crude and lease condensate averaged 6,328,850 bbl. daily for week ended May 9, up 53,325 bbl. daily. . . . Total well completions for the week gained 1 well to 981. . . . Wildcat completions increased 58 wells to 232. . . . Total rotary rigs operating in United States decreased 8 rigs in the week ended May 11 to 2,576.

TRENDS.—Cumulative well completions for 1953 through May 9 totaled 16,355, ahead of 1952 for the first time this year. . . . Imports reported by the American Petroleum Institute averaged 959,000 bbl. daily for the 4-week period ended May 2, the lowest 4-week average since October 11, 1952. . . .

HELICOPTER VIEW of the exposition, looking southeast from above exposition headquarters.

OIL SHOW OPENS

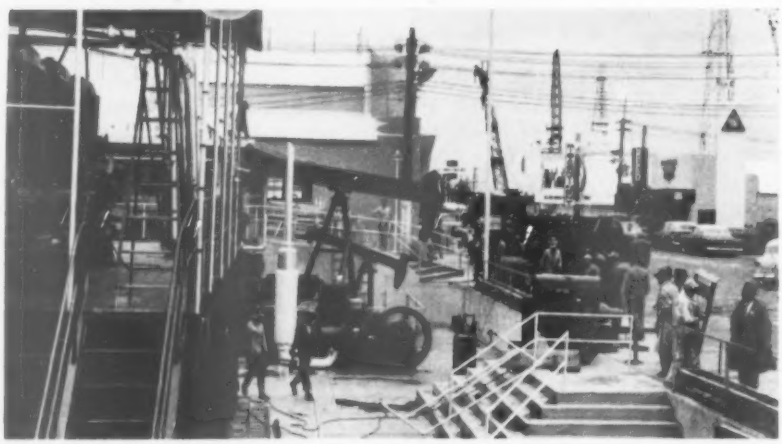


TYPICAL BOOTH at the oil show, representative of hundreds of other displays showing products of 1,484 exhibitors.

THE World's Fair of the petroleum industry, the thirtieth International Petroleum Exposition, opened May 14 in Tulsa under cloudy skies but with no apparent lessening in interest in the tremendous display of oil-industry equipment.

Opening of the show on time was a credit to the exhibitors, who for the previous week had contended with heavy rains which hampered workers moving in equipment and decorating display areas.

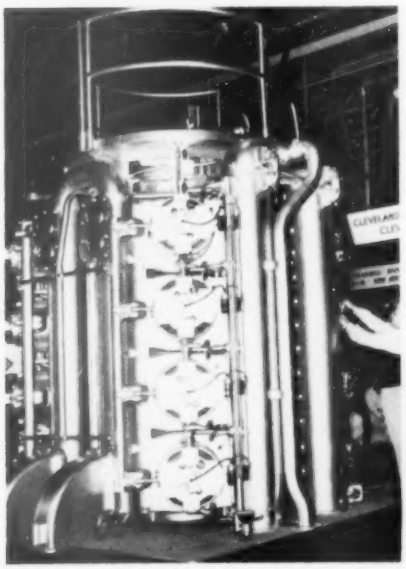
Here, Journal photographers present pictures giving some idea of the tremendous size of the show and the equipment items displayed before visiting oil men from throughout the United States and from many foreign countries.



DRAKE DRIVE scene catches some of the vast array of drilling equipment. As this Journal photo was made, painters were leaving and early I.P.E. visitors were entering.

shows tremendous size of this year's display, spread over 26 acres of show grounds.

AVIATION'S INTEREST is shown by this Beechcraft display.



BIG ENGINE is this vertical radial unit capable of generating more than 3,000 hp., one of many oil-field engines viewed by I.P.E. visitors.

OLD TIMER contrasts with the 1,000-hp. plus drilling rigs capable of drilling below 15,000 ft. This one found oil at 69 ft.

TWO-WHEEL shot-hole drill which can be hooked behind a passenger car or pickup truck. At right is mud-pump unit.

GALA OPENING CEREMONIES at the thirtieth-anniversary International Petroleum Exposition in Tulsa May 14 included welcoming speeches by exposition officials and the Governor of Oklahoma; music by a brass band; and a call to the colors as a huge American flag was raised over the grounds. This view shows the midway and speakers' platform erected in front of the Nomads headquarters building at Drake Drive and Silver Lane. More than 2,000 persons gathered in this general area for the official opening.

Huge Show Under Way

Charlton H. Lyons officially opens mammoth oil fair; blaring bands, roaring machinery greet first visitors

Henry D. Ralph

TULSA.—The 1953 oil show, largest in the 30-year history of the International Petroleum Exposition, opened May 14 with brief formal ceremonies, the massing of five bands, and the roar of heavy machinery put in motion for the thousands of visiting oil men from all over the world as they poured into the industry's biggest equipment display.

The machines and equipment displayed at this exposition constitute the oil reserves of the future, because they represent the working of the American competitive system and provide the means for finding and producing much oil in the future and of turning it into still more useful products, it was declared by Charlton H. Lyons in opening the exposition.

Lyons, an oil producer of Shreveport, La., and president of the Independent Petroleum Association of America, said that the equipment here is a guarantee that the American people will be assured of adequate petroleum supplies for all needs.

Truly the greatest industrial exposition on earth, Lyons called it, symbolic of the creative genius of one of the world's greatest industries.

"The machines, equipment, and the magical scientific processes on display here not only testify to past accomplishments of the industry, but they are symbolic of the adaptability and determination of the industry to meet increasing needs," Lyons said.

"The machines and equipment in this exposition give promise of deeper and deeper wells and increased recoveries, improved refining processes, and greater and greater know-how in seeking and finding and making available oil from presently unknown sources in the earth's crust.

"But, the factor to be emphasized is the technology that is always expanding and improving. Past estimates of reserves of the future have been based on the technology of the time of the estimate. As the technology changes, the reserve picture changes. The errors of predictions have been chiefly in failing to take into consideration the new techniques which would be developed.

"Technology advances most rapidly under a free economy and incentive system. As long as these conditions prevail, the minds of men will be directed toward improving methods of finding more and more oil and gas. We can be sure that our concept of oil finding in the years to come will be quite different than now.

"Therein lies much of our future reserves."

Much due to incentives . . . Lyons asserted that the oil industry has grown to its present size in this country and can promise consumers abundant supplies of petroleum at reasonable prices because of the incentives and competition arising from diversified private ownership of land by individuals.

"This diversity of ownership has made it possible, for those desiring to do so, to lease thousands of acres of land from thousands of individual landowners throughout the nation," he said.

"The industry has grown to its present great proportions, because under this system, both the large and small units of the industry were encouraged, and their combined efforts have resulted in unlimited benefits to millions. The ownership of leases by vast numbers of operators spurred competition and stimulated all phases of petroleum activity. Small operators have contributed a unique aggressiveness and diversification which lead to the discovery of many great fields which otherwise may not have been discovered.

"The larger units have contributed to

OFFICIALLY WELCOMING delegates and visitors to the International Petroleum Exposition in Tulsa May 14, were, left to right: William G. Skelly, president of Skelly Oil Co., Tulsa, and head of the exposition; Gov. Johnston Murray of Oklahoma; William B. Way, exposition general manager; and Charlton H. Lyons, president of the Independent Petroleum Association of America.

huge capital sums and tremendous effort necessary to refine, transport, and market petroleum in vast quantities.

"The existence of economic incentives, and personal liberties, determine the efficient development of all natural resources. When men are free to think, to argue, to dissent, to dream, there is no limit to their ability to produce."

Other officials participate . . . Gov. Johnston Murray of Oklahoma preceded Lyons with a brief address of welcome to the visiting oil men and spoke of the importance of the oil industry in this state. Explaining that he had worked in the oil industry in South America as a young man and had toured many Latin American countries last fall as ambassador of the I.P.E., Murray shifted to the Spanish language and extended an official welcome to the South American visitors in their own tongue.

Others participating in the opening ceremonies included W. G. Skelly, president of Skelly Oil Co. and president of the I.P.E. since 1925; William B. Way, I.P.E. general manager; Barton A. Myers, Tulsa independent oil operator and chairman of the housing bureau; Mayor C. M. Warren, of Tulsa, and a group of officials and directors of the exposition.

Mayor George Street of Enid and Quinton Liddle, independent operator of Ardmore, representing Oklahoma City serving as official host for the opening day, also spoke. Liddle presented Skelly with a plaque on behalf of the oil industry of southern Oklahoma in appreciation of his services to the industry over a period of more than 40 years.

The biggest ever . . . Raising the huge American flag across the midway officially opened the biggest oil show the industry has ever held and one of the largest equipment displays assembled anywhere.

The 26 acres of the exhibit grounds hold equipment and displays with an estimated value of $100,000,000, shown by 1,484 exhibitors.

The products of every branch of science and industry are shown here, for the oil industry uses them all in one way or another, and virtually all of them have something new to offer this year to improve the efficiency of oil production, transportation, and processing.

The international character of the exposition is shown, not only in the delegations of visitors from every free country of the world with any interest in petroleum, but in the exhibits of foreign manufacturers of petroleum equipment. There are 36 exhibitors from 10 foreign countries: Canada, England, Venezuela, Brazil, France, Germany, Italy, Mexico, Scotland, and the Netherlands.

It is primarily a fair for the sale and advertising of equipment, and many sales were made during the opening hours of the show. But it is equally an exposition for the education of oil operators on better ways of using the most modern equipment, and to this end the exhibitors are using all known methods of visual education from cutaway models to animated motion pictures.

For the nontechnical visitor the most impressive sights are the huge bulk of the drilling rigs and the mammoth pieces of equipment used in other branches of the industry, and also the elaborate working models and museum-type displays of processes and of installations, such as refineries, which cannot be exhibited physically.

Some companies have gone to great expense to construct air-conditioned buildings and modernistic displays which give the exposition the carnival atmosphere of a world's fair, but what the visiting oil operators from all over the world want most to see are the advances in technology which they can put to use.

Emphasis on technology . . . There have been many technological advances in the oil industry during the past few years, and the oil show emphasizes and dramatizes them. It also dramatizes the interchange of scientific information within and among industries and the competitive struggle to improve equipment which keeps American technology constantly advancing.

How the petroleum industry borrows from all others and adapts new developments to its uses is perhaps the most striking impression which this exposition makes on the visitor.

Electronics, for example, almost an infant industry, is represented in the exhibits of equipment for every branch of the oil industry. There are microwave communications systems for pipeline operation, mobile radios for field operations, and direction finders for survey work. There are "electronic brains," computers for analyzing refinery operations, reservoir behavior, and other mathematical problems; delicate measuring and control instruments; and electronic devices which are flown through the air or dropped thousands of feet below the surface in the hunt for oil.

Atomic energy, an even newer science, is also well represented at the exposition. It shows up in well-logging devices, tracers for pipe-line operation, and methods for analyzing refinery products.

Metallurgical progress . . . Examples of advances in metallurgy are prominent throughout the show. The oil industry has always demanded stronger but lighter steel fabrications for its many

PROMINENT BUILDING on the exposition grounds is the two-block-long State of Texas Building, the entrance of which appears at left. Photograph shows cleanup trucks preparing to leave this midway section just prior to the official opening.

operations, and many manufacturers are displaying their progress in meeting this demand. Now there is greater emphasis on resistance to corrosion, and every new alloy which promises longer life under the critical conditions of oil field or refinery use is being examined with interest.

The newer metals, too—aluminum, magnesium, and complicated new alloys—are prominent in many displays, offering lightness in weight, resistance to corrosion, and other special characteristics for exacting uses. To cite but one example, there are several exhibits of well-perforating guns which shatter to powder and gas when fired, leaving nothing in the well to interfere with further drilling.

Plastics vs. steel . . . Another new industry—plastics—is challenging King Steel for dominance of the exposition. Many of the plastics are made from petroleum, as is well illustrated in the petrochemical display, but plastics are finding their way into equipment for almost every oil operation. Solid plastics go into much well-bottom equipment which can be drilled through easily when their job is finished, and liquid plastics are shown to plug formations in a well bore.

Not only are there plastics for coating pipe lines, but various types of plastic pipes are exhibited, useful for handling liquids which would corrode most metals. So versatile is the plastics industry that almost every exhibit has some example of the use of one of these synthetic materials.

Hydraulics advances . . . The science of hydraulics is evident throughout the show, too. Its developments are shown in the jet bits which direct the drilling mud in such a way as to help wash out the formation and keep cuttings clear of the bit teeth, thus making for much faster drilling. In control of reservoir energy, better knowledge of fluid behavior is increasing oil recovery, as shown in commercial as well as educational exhibits. And, since the entire petroleum industry is based on moving fluids, there are many adaptations of hydraulic principles in improved pumps, valves, and conduits for handling drilling mud, refinery catalysts, viscous semiliquids, and high-pressure gases.

Automation, a new word in industry, has a prominent place throughout the oil show. The trend in oil as in many other industries is toward reduction of the human element in operations, and oil men are taking great interest in the exhibits of new instruments and control devices which not only reduce human effort but also eliminate human errors. Such devices range from automatic computers and calculators through electronic analyzers to remotely controlled valves.

The old-time driller, who went by the sound and feel of the drilling cable, and the early-day refiner, who operated his stills by the seat of his pants, would be flabergasted at the array of instruments of all kinds offered for every phase of petroleum operations. Instruments, gages, meters, recorders, analyzers, and automatic adjusters are the order of the day in this 1953 equipment exhibit, exemplifying the observation that this is the age of instrumentation.

But while petroleum equipment is becoming more delicate and precise, it is also getting huskier, for many of the exhibits feature bigger, stronger, and heavier machinery and materials for drilling, producing, pipe lining, and refining. In spite of their growing size, all units subject to frequent moving are also becoming more portable. Virtually everything designed for field operations makes a premium of demountability and roadability to save precious time and manpower.

Among the more spectacular mechanical behemoths at the show—aside from the drilling rigs themselves—are the many kinds of materials-handling equipment, particularly the earth movers. Cranes, bulldozers, ditchers, boom tractors, and the heaviest models of automotive equipment of all types are offered to oil operators who need to get on location or install a facility quickly regardless of the nature of the terrain or the weight of the equipment.

The power to handle heavy equipment with the speed demanded by today's activity is provided too, by the many manufacturers of electrical, internal-combustion, and turbine prime movers in every size for every purpose.

NEW SIKORSKI helicopter of Rockwell Manufacturing Co., which came to Tulsa for the oil show. The helicopter made the trip in two legs: Pittsburgh to St. Louis, and St. Louis to Tulsa. Several of the photographs appearing in this issue were shot by The Oil and Gas Journal's photographic team from the ship as it hovered over the exposition grounds.

INTERNATIONAL FLAVOR at the oil show is provided by this heavy-duty pumping unit and slim-hole drill manufactured in Germany and exhibited in the United States for the first time. Representatives from 35 nations made reservations to attend the exposition, representing these countries: Algeria, Argentina, Australia, Belgium, Bolivia, Brazil, Ceylon, Chile, China, Colombia, Cuba, Curacao, Dominican Republic, Egypt, England, France, Germany, Greece, Israel, Italy, Lebanon, Mexico, Netherlands, New Zealand, Pakistan, Panama, Peru, Puerto Rico, Saudi Arabia, Spain, Switzerland, Thailand, Turkey, Uruguay and Venezuela.

Special Events Slated

Exposition visitors may attend functions ranging from symphonies to baseball games as part of nonoil program

TULSA.—Symphony concerts, baseball games, tours, civic-club luncheons, and other special events will highlight the nonoil program for visiting oil men attending the International Petroleum Exposition here this week.

A highlight of the oil program will be a downtown parade May 19 under auspices of the Petroleum Motor Transport Association. This parade will feature motorized equipment of all types, from portable rigs to products tank trucks. After the downtown show, the parade will move to a special area east of the exposition grounds, where the machinery and equipment will be displayed and demonstrated.

Three symphony concerts, to be presented in front of the Texas Building on the exposition's Drake Drive, are scheduled for this week. The first will be a "South American Night" concert May 19; the second, a "European Night" concert May 21; and the third will be a "North America Night" concert May 23. All will be presented by the Tulsa Philharmonic Orchestra at 9 p.m. each of the 3 days.

Special events have been scheduled for wives of visiting oil men and other women attending the exposition. These will include:

DAILY SCHEDULE

10 a.m.—Exposition gates open.
11 a.m.—Hall of Science Film Center opens.
9 p.m.*—Symphony concert, Drake Drive.
*Tuesday, Thursday, and Saturday.

. . . A tour of Woolaroc Museum and a luncheon in the Adams Building, Bartlesville, May 19, sponsored by the Tulsa Desk and Derrick Club and Phillips Petroleum Co.

. . . Style show and tea at the Petroleum Club May 20, planned by the Women's Aeronautical Association.

. . . Visit to the Will Rogers Memorial, Claremore, May 21, sponsored by the Desk and Derrick Club.

Plans for foreign guests . . . Oil men and government representatives from abroad will be entertained at the following functions:

. . . Informal party for foreign visitors and their guests at Southern Hills Country Club the evening of May 20, sponsored by W. H. Helmerich, president of Helmerich & Payne Drilling Co.

. . . Dinner for all international visitors to the exposition at the Tulsa Club May 18, sponsored by exposition officials.

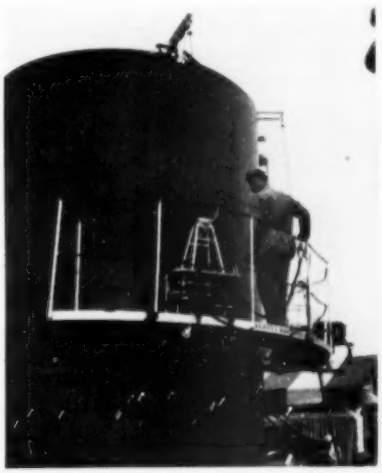
. . . Open house each day by Oklahoma's governor, Johnston Murray, and his wife at the Tri-State Building penthouse.

. . . Cocktail party and buffet dinner at Cimarron Ballroom May 19, sponsored by the National Oil-Equipment Manufacturers and Delegates Society.

Three other special events connected with the exposition are scheduled. They are the breakfast for exhibitors May 18 at the Drillin' Inn cafeteria on the exposition grounds, sponsored by the exposition management; an open house and the first public showing at the new national headquarters here of the American Association of Petroleum Geologists May 19; and a buffet dinner May 20 at the Tulsa Club for visiting purchasing agents, sponsored by the Mid-Continent Purchasing Association.

Tours of the City of Tulsa, the University of Tulsa campus, and the Mid-Continent Petroleum Corp. refinery will be conducted daily during the exposition.

The special refinery tours are being conducted at 10 a.m. and 2 p.m. daily, except Sunday. Arrangements may be made by calling 3-3101. Campus tours may be arranged by calling the dean of the College of Petroleum Engineering, at 9-6351. City tours are being handled by Johnson Travel Service, 4-4548.



ONE OF MANY equipment exhibits at the I.P.E. is this "mechanical stirrup" tank cleaning-painting scaffold. It is hoisted up and down either by air motors or by electric drive. All told, the exposition has 147 exploration exhibits, 363 drilling exhibits, 310 refining exhibits, 390 production exhibits, 363 pipe-line exhibits, and aisles full of special scientific displays in the Hall of Science.

THE STORY OF GEOLOGY is told by this portion of the featured exhibit in the geological section of Hall of Science. The surfaces processes of erosion and deposition are illustrated by a model of surface features and the corresponding cross-section.

Education in Oil

Exposition's Hall of Science covers gamut of petroleum's activities, from basic geology to magic of petrochemistry

Philip C. Ingalls

TULSA.—An oil-industry education compacted into six exciting exhibit areas is offered in the Hall of Science at the International Petroleum Exposition.

Here visitors are seeing the oil industry from beginning to end as they enter the geological exhibit and pass on around the hall through exhibits on geophysics, development and production, transportation, refining, and petrochemistry. For the first time the Hall of Science is partitioned so as to direct visitors in this logical sequence of the history of oil from its discovery through day to day uses.

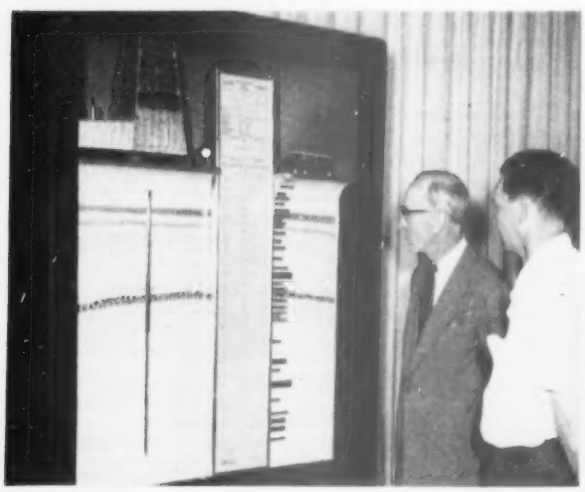
The hall is a world of oil in miniature: a model of a portion of the earth's surface painted in natural colors; working models of well-logging equipment and other geophysical instruments; models of drilling and producing equipment; activated model pipe lines, storage tanks, and railroad terminals; a working model of a refinery; and a parade of mannekins illustrating the influence of the oil industry in everyone's day to day life.

Exhibits for the Hall of Science were selected to show the progress the industry has made since the last exposition in 1948 and, where this was not feasible, to do a worthwhile public-relations job in the field of popular education of just what the oil industry means to the individual. Displays are designed in such a way that not only can they be understood by the laymen but that technical men also can profit by a visit to the hall.

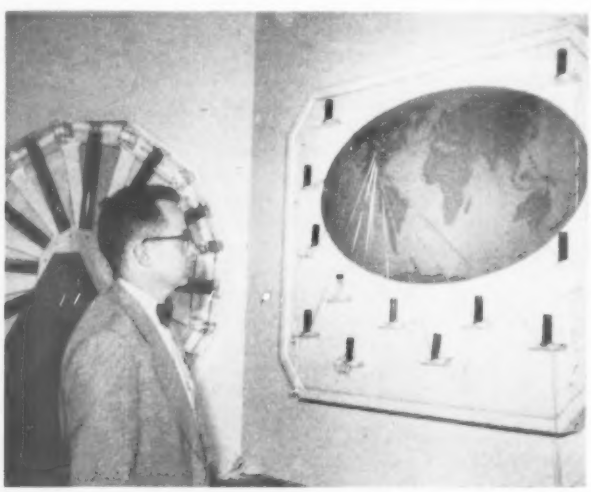
Geological . . . First stop on the Hall of Science tour of the oil industry is the geological exhibit. Here is depicted the story of the part that geology and geologists play in the oil industry.

The main feature of this exhibit is a booth called "The Story of Geology." This booth includes a diorama showing the surface expression of the rock structure shown by a cross-section in the foreground. Beneath this cross-section is a lighted geologic time table showing the development of life through the geologic eras. A panel of the booth is devoted to an explanation of the never-ceasing surface processes of erosion and deposition and the accumulation of oil in traps. *(See page 483 for additional information on this exhibit.)*

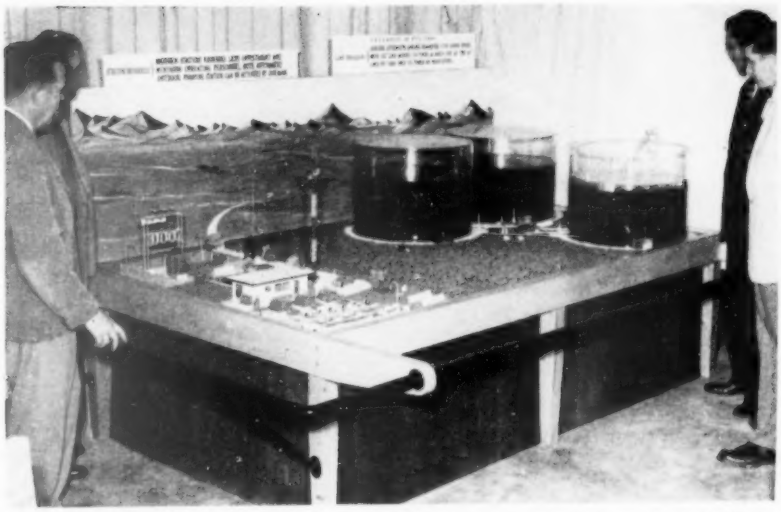
Other exhibits in the geological section of the hall include a colored relief map of the north-central portion of the



RADIOACTIVTY LOG MODEL which shows the characteristic "kicks" of various kinds of formations is but one of many interesting exhibits in the geophysical section of the Hall of Science.



THERE'S A WORLD OF DIFFERENCE in the crude oil produced in various parts of the world as illustrated by this display which forms part of a fascinating exhibit on refining.



TWO TANKS FILL FASTER THAN ONE in this transportation section exhibit which has a model 21-in. line filling the two tanks and a model 16-in. line filling the third tank. The pumping station to the left is a model of the kind that requires only one man for operation.

United States, cores from numerous oil-producing formations of the world, a moving map of the oil and gas fields of North America, a "drilling" model of a truck-mounted core drill, microscopes through which visitors view intricate microfossils and rock sections, and fluoroscopes in which oil-saturated sandstone samples can be readily differentiated from water-saturated or dry samples. An elaborate display of fossils, complete with lecturer to explain use of fossils in the search for oil, is attracting large crowds.

Geophysics . . . Adjoining the geological exhibit is that demonstrating the functions of geophysics in the oil industry. Here are shown the instruments that geophysicists use in their search for oil traps. One portion of the display is dedicated to working models of electric logging and radioactivity logging methods (neutron and gamma-ray) with explanatory notes. Animated models demonstrate the principles of seismic, gravity meter, and magnetometer surveying.

This exhibit area includes models of the numerous kinds of gravity meter principles that have been developed during the past 30 years. Nearby stands the big, clumsy torsion balance of the kind that made the first geophysical discovery of oil in the world. In contrast is the thermos-bottle-size gravity meter used today. A "bird," one type of flying magnetometer, is exhibited with the mechanism used to string it out behind a flying plane. The wing-mounted type of flying magnetometer is shown nearby.

The world-wide activity of geophysical research is illustrated by a large multicolored map with tiny lights representing the volume of geophysical work conducted last year by countries. Another exhibit is designed to tell the story of the so-called tidelands as the problem is seen by the oil men who must figure out ways and means of finding and producing the oil that is believed to be present beyond the shore lines.

OIL CONSERVATION in America's biggest oil field is demonstrated by this model of the salt-water-disposal methods employed in East Texas field. This display is in the development and production section of the Hall of Science.

Development and production . . . Next on the tour through the hall is the exhibit of oil-field development and oil production. Here visitors find an activated exhibit on conservation practices at America's biggest oil field, East Texas.

One of the most popular exhibits in the hall is found here in the form of a working scale model of a drilling rig which is actually "making hole." The permeability of sandstones and limestones is shown by a model which demonstrates the various amounts of pressure required to force air through different types of rock samples immersed in water.

Another interesting exhibit was that of Stanolind Oil & Gas Co., consisting of working models of two new developments in production methods. One illustrated a new gas-lift method of producing oil. The other was a model illustrating the first fully automatic paraffin scraper.

The scraper contains alcohol and is slightly smaller than the tubing. As it sinks in a flowing well the heat at the bottom of the hole expands the alcohol, spreading a gasket against the tubing. Rising oil forces it upward, removing the accumulated paraffin. As it cools near the surface, it contracts and starts the cycle again.

Other displays within this exhibit include models of hydraulic formation fracturing and cementing practices, casing perforation by bullets and shaped charges, the latest innovations in drilling bits and mud control, and a model LST tender for offshore drilling operations.

Transportation . . . The fourth exhibit on the Hall of Science tour is devoted to the transportation of oil and natural gas. One exhibit shows the progress of pipe lining during the past few years. This model points out that the modern station requires less investment and minimum operating personnel — only one man is required to attend the automatic pumping station—and that the use of higher-strength, larger-diameter pipe saves steel. A model of a 22½-in. line fills two transparent tanks with colored liquids faster than a model 16-in. line fills one tank of the same size and yet the larger line requires only 1½ times as much steel.

The use of microwave communication in the transportation branch of the oil industry is demonstrated in the hall by an actual installation. This exhibit includes six circuits "connected" between installations at opposite ends of the hall.

Three of the circuits are telephone connections so that visitors may talk to each other by means of microwave communication. One circuit is connected to teletypes so that visitors can type to each other across the hall. Another circuit operates a valve by remote control to adjust pressure at a simulated pipe-line station. The sixth circuit is a "talking tank gage" which, from controls at one end of the hall, will broadcast at the other end the fluid level in a tank.

PETROCHEMICALS THAT SERVE YOU pass in review in a never-ending parade in this exhibit in the petrochemical section of the Hall of Science.

GROWING TREE OF PETROCHEMICALS tells the story of the part that petrochemicals play in supplying raw materials for manufacturers of merchandise used by everyone.

Refining . . . A working model of a refinery which takes crude oil from a model of a flowing well and actually breaks it up into various petroleum products in transparent fractionating towers is featured by the exhibit on refining.

Another exhibit shows the various kinds of crude oil found throughout the world and points out how this poses a problem for the refiner, who must develop different techniques for each type of crude oil.

The vast amount of research that is going on in the refining branch of the oil industry today is demonstrated by an electron microscope which is being viewed in operation by visitors at the hall.

Petrochemistry . . . Last stop on the educational tour through the Hall of Science is at the exhibit of petrochemistry. Here the great variety of ultimate uses to which petroleum and its products are currently being put is shown to the public. An animated exhibit shows how petrochemicals are used on the farm ("more and better food through progressive farming"), and another the influence of petrochemistry in the everyday life of everyone ("the never-ending parade of petrochemicals that serve you.")

Between these two animated exhibits is the "Growing Tree of Petrochemicals." Roots of this tree are in the oil and gas fields and branches are detergents, additives, sulfur and sulfur derivatives, refrigerants, medicines, solvents, antifreeze, dyes, agricultural chemics, plastics, carbon black, synthetic rubber, synthetic fiber, synthetic resins, and the top branches, "countless petrochemicals still to come."

On platforms in the center of this exhibit are displayed the variety of merchandise now available to the buying public that is made possible by petrochemistry.

Oil Films Shown

Thirty best oil films being run daily during exposition

REPRESENTATIVE moving pictures from all phases of the oil industry are being shown continuously at the Film Center of the Hall of Science at the International Petroleum Exposition.

More than 50 different technical, educational and popular films are being used in a program which shows about 30 different ones each day. Subjects of these films are about equally divided between exploration, production, transportation, refining, uses of petroleum, research, petroleum sciences, education, and entertainment. The movies being shown were selected from several hundred films offered by oil companies and reviewed by a committee under Stanley W. Wilcox, Seismograph Service Corp., Tulsa.

There is no charge for admission to the air-cooled theater which is open from 11 a.m. to 9:30 p.m. each day of the exposition. The average running time for the films is about 25 minutes.

A schedule of the day's program, which varies from day to day, is posted at the entrance to the theater at the south end of the Hall of Science. The title of the picture running is also prominently displayed near the entrance to the film center. Visitors are free to come and go as they please. There are short recesses between films in order to permit easy entrance and exit to the theater.

What's showing . . . Titles of a few of the representative films being shown are:

"Operation Take-Up," by Interstate Oil Pipe Line Co.; "Creating New Channels," by Halliburton Oil Well Cementing Co.; "Natural Gas," by American Gas Association; "Eternal Flame," by Columbia Gas System, Inc.

"Lubricating Oil's Amazing Molecules," by Standard Oil Co. (Ind.); "Miyah (Water Story in Arabia)," by Arabian American Oil Co.; "Story of Salt Water Disposal," by East Texas Salt Water Disposal Co.; "Pipe Line on Wheels," by E. I. du Pont de Nemours & Co., Inc.

"Volcanoes in Action," by Encyclopedia Britannica; "Gears and Oil," by Sinclair Oil Corp.; "Birth of an Oil Field," by Shell Oil Co.; "Airborne Magnetometer," by Department of Commerce; "Photogeology, a New Look for Oil," by Geophoto Services; "Man on the Land," by American Petroleum Institute.

"Information at Work," by Taylor Instrument Co.; "Research, a Pattern for Progress," by The Texas Co.; "Automatic Drilling Rig," by Humble Oil & Refining Co.; "Fabulous Fishing," by Pan American Airways; "Some Animations of Seismic Prospecting," by Seismograph Service Corp.

"Hell on the Holley," by M. M. Kinley; "Oil Across Arabia," by Bechtel International Corp.; "Ancient Shrines of Peru," by Braniff Airways; "Ropes of Steel," by Bethlehem Steel Co.; "Struggle for Oil," by Canadian Film Board; and "Red Towers," by Fluor Corp.

HARBOR ISLAND laboratories located near Wrightsville Beach, N. C., are the center of extensive investigations of the corrosive effects of sea water on a wide variety of metals, alloys, and protective coatings. In addition to the exposure tests on the dock, foreground, a full range of research on impingement attack and other phases of sea water corrosion is carried out in the laboratory building.

Attention on Corrosion

Technicians representing all industry divisions discuss means of prevention at Wrightsville Beach, N. C., meet

George Weber

WRIGHTSVILLE BEACH, N. C.—Corrosion of equipment used in all divisions of the oil industry received the concentrated attention of engineers and chemists attending a 3-day forum sponsored here recently by the International Nickel Co., Inc. Representatives of 24 oil companies and affiliates and 15 equipment and service companies participated in five informal-discussion sessions concerned with corrosion problems in refining, production, pipe line, and tanker operations.

At Inco's Harbor Island Laboratories the group inspected a wide variety of testing projects designed mainly to evaluate the resistance to sea-water corrosion of metals and protective coatings. A large dock supported on bare, sheathed, and coated experimental piling is used to conduct total and partial immersion tests.

In the laboratory, tests are conducted on sea-water evaporators, condensers, piping and other equipment used in salt water service. The precise evaluation of the velocity effects of sea water is made possible through the use of the aspirator type of jet test, the EES erosion test, the rotating spindle, and the standard polarization test. Also included are the conventional salt-spray cabinets, chlorination facilities, and two large atmospheric testing lots for metal specimens located at nearby Kure Beach.

In the discussion sessions, refining and field-processing representatives showed considerable interest in corrosion involved in the handling of amines, sour crudes, and salt-water coolant. Metal deterioration from hydrogen, naphthenic acids, CO_2 and hydrochloric acid was also covered.

In the producing division, sweet gas, sour gas, bacterial and salt-water corrosion of casing, tubing, rod strings, and off-shore platforms were discussed at length. Tanker men were concerned with the use of dehumidification inhibitors and cathodic protection as means of combating serious internal corrosion.

OVER 20,000 SPECIMENS are located at the Kure Beach atmospheric-test lots. They are supported by porcelain insulators on test frames set at a slope of 30° from the horizontal.

Amine corrosion . . . Some refiners present were concerned about serious corrosion of mild steel in regenerator-reboiler bundles used in aqueous amine systems. This problem does not appear to be universal, and the consensus of the group was that reboiler temperature is a factor. The critical temperature appears to be about 245° F., above which it is believed that corrosion is caused by some organic decomposition product formed from the amines. Success in controlling this type of corrosion was reported by some through use of a small batch still which continuously removes the heavy decomposition product from an amine side stream.

Typically, corrosion experience in this field varies widely, and each individual case is to be judged separately. If any generalizations were to be drawn, however, they appeared to indicate that refiners with this type of problem attempt to reduce reboiler temperatures and remove high-boiling organic fractions from amine streams.

Salt-water cooling . . . The wider adoption of salt water as a coolant by seaboard refiners added to interest in protection of condenser tubes and water boxes of condensers. Of the three types of corrosion encountered, deposit attack, plug-type pitting, and impingement attack, the latter received most attention. In direct disagreement with British tests, the group was told that the presence of air bubbles in cooling water did not appear as a factor from extensive tests conducted in this country over a wide velocity range.

Jet tests have shown that metal hardness is not a factor in impingement attack. In general, use of lower velocities can reduce impingement attack in some cases, and adoption of deeper water boxes may also be beneficial. Tests indicate that the greatest tolerance to this type of attack is offered by 70-30 copper-nickel alloy with 0.50 per cent iron.

Aluminum clad tubes have shown good service at less than 10-ft. per second velocities, but very low concen-

trations of copper which can be picked up by sea water from copper alloys used upstream from condensers, will contaminate the aluminum and cause trouble. Aluminum shows promise if care is taken to remove this source of copper.

The group was told that research at Harbor Island indicated that chlorine in concentrations sufficient to control sliming and fouling did not represent a serious corrosion hazard to condenser tubes. Continuous chlorine injection at low concentrations proved superior to intermittent treatment at high concentrations in reducing slime formation. Further, carefully controlled chlorine introduction at several points in a large salt-water-cooling system was recommended to permit the retention of a light slime coating which gives some metal protection.

On cathodic protection of condenser tubes employing salt water as coolant, refiners were told to make certain that zinc anodes contain not more than 0.002 per cent iron to obtain necessary current efficiency. Magnesium of commercial purity is satisfactory for current efficiency, but low purity magnesium anodes result in undue waste of the anodic metal. The cathodic protection afforded admiralty brass tubes by various metals used in water boxes and channels was discussed. Painted monel was considered neutral, giving satisfactory service with admiralty tubes without additional cathodic protection.

Emphasis was placed on the need for corrosion protection in the splash zone of all piling in sea water. Data from hundreds of pilings examined all along the East Coast showed that the greatest attack occurred at about 5 ft. above mean high water. Below low tide, vinyl coatings and cathodic protection at low-current densities have proved adequate. In this zone, corrosion-resistant sheathings extending from the half-tide level to the upper limit of the splash zone were recommended. Monel sheathing has given very good results to date, it was reported.

In the tidal zone either bare or coated steel with adequate cathodic protection was considered adequate.

New Processes Detailed

Shell, Anglo-Iranian describe methods for catalytically desulfurizing light, middle distillates at A.P.I. meet

George Weber

NEW YORK.—Two catalytic desulfurization processes for use on light and middle distillates were discussed in detail last week at the annual midyear meeting of the American Petroleum Institute's Division of Refining. One originates with Shell in The Netherlands, and the other was developed by Anglo-Iranian Oil Co. in England.

Shell's Hydrodesulfurization process, employing a "trickle" technique for treating liquid feedstocks, was presented for the first time in a comprehensive paper by H. Hoog of Royal Dutch-Shell Laboratories, Amsterdam, and H. G. Klinkert and A. Schaafsma both of Bataafsche Petroleum Maatschappij, The Hague.

According to the authors, this process will remove 85 to 90 per cent of sulfur present in both catalytically cracked and straightrun gas oils. The feed stock in liquid form is trickled in a thin film over a bed of solid catalyst. Recycled hydrogen constitutes the continuous vapor phase. A 15 to 20 per cent saving in capital investment is claimed in comparison with gas-phase catalytic desulfurization processes.

Outside hydrogen source . . . Aimed solely at conversion of sulfur compounds to hydrogen sulfide, this process requires an outside hydrogen source. It is now considered economic when operated in conjunction with catalytic reforming, which produces net hydrogen in the tail gas. Shell research has established that the trickle technique, using a relatively small amount of hydrogen results in no loss in catalyst activity.

Catalysts of widely varying composition were found to give selective desulfurization while suppressing side reactions such as hydrogeneration of aromatics. Optimum performance was obtained with a catalyst prepared by impregnation of a bauxite carrier with a cobalt-nitrate and ammonium-molybdate solution containing cobalt and molybdenum in an atomic ratio of 1 to 5.

Reduction in sulfur removal was found to be very small and no permanent loss in catalyst activity was noted when hydrogen sulfide was left in the recycle gas. Hence, H_2S extraction from recycle gas is not required, and the reaction product can be removed from the system by flashing from the liquid product in a low-pressure separator. The decrease in degree of desulfurization also was found to be small when a buildup of 15 per cent by volume of methane was permitted in the recycle gas.

For most commercial applications catalyst life on the order of 1 year should be realized. Catalyst activity can be restored completely by in-place regeneration. The process can be operated at pressures of 300 to 750 psia., and temperatures from 660° to 730° F. For deep desulfurization (80 to 90 per cent sulfur removal) of middle distillates, pressures from 600 to 750 psia., and temperatures from 690° to 720° F. are preferred.

A unit using this pocess now is under construction at the Stanlow, England, refinery of Shell Refining & Marketing Co., Ltd.

Autofining process . . . Anglo-Iranian's Autofining process *(The Oil and Gas Journal March 17, 1952, page 169 and September 8, 1952, page 67)* was the subject of a paper by F. W. B. Porter, of Sunbury-on-Thames, Middlesex, England. This process, through controlled dehydrogenation of naphthenes, provides its own source of hydrogen for vapor-phase catalytic desulfurization of petroleum distillates. The author gave the developmental background on the process and its application to various feed stocks in the naphtha, kerosine, or gas-oil boiling ranges.

Autofining of long distillate from Slaughter (West Texas) crude, at 780° F. and 120 psig., showed a 99 per cent yield of desulfurized product with sulfur content reduced from 1.15 to 0.174 weight per cent. The over-all sulfur removal of 84.9 per cent was broken down as follows: naphtha fraction, 99.2 per cent, kerosine fraction 91.8 per cent, and gas-oil fraction, 78.5 per cent. Data were reported from operation of a 350-bbl. per day pilot-plant unit and a 3,500-bbl. per day commercial unit. The latter, located at Anglo Iranian's Llandarcy, Wales, refinery has been in operation since July 1952.

Hydrogen Attack

Shell reports progress in prevention at A.P.I. meet

NEW YORK.—Considerable progress has been made since 1951 in research aimed at preventing hydrogen attack in the processing of sour gas and sour crude, Shell engineers reported last week during the midyear meeting of the American Petroleum Institute's Refining Division.

In presenting a report on the subject, W. A. Bonner, H. D. Burnham, and J. J. Conradi, of Shell Oil Co., Wood River, Ill., and T. Skei, of Shell Development Co., Emeryville, Calif., said additional research and plant work have uncovered new information on

hydrogen attack since Shell engineers last reported on the project during the A.P.I. refining meeting held in 1951.

The current paper, like the original one, is limited to the type of hydrogen attack associated with aqueous corrosion in which the hydrogen penetrating the steel is a product of a corrosion reaction.

Preventive measures . . . When streams which contain ammonia and substantial amounts of hydrogen sulfide at a pH of 7 to 9 are processed, extensive damage to steel equipment can be sustained through hydrogen blistering and fissuring, said the authors. Both hydrogen penetration and corrosion can be eliminated, however, by addition of ammonium polysulfide to the aqueous phase or by incorporation of oxygen in the gas stream which produces polysulfide within the system.

Practical plant experience shows that hydrogen penetration is prevented by the daily addition of 0.23 lb. of sulfur, in form of ammonium polysulfide, and 1 to 5 gal. of water to a 1,000-bbl. per day light-hydrocarbon stream containing large quantities of hydrogen sulfide. In another plant experiment, hydrogen penetration also was prevented by daily addition of 3.5 cu. ft. of oxygen, replacing the polysulfide.

Cyanide or hydrogen cyanide, if present in refinery streams, may remove sulfur from the polysulfide and destroy the latter's inhibiting effect. The authors consider polysulfide addition, or air injection the most effective methods for prevention of hydrogen penetration, and report that Shell is installing air-injection equipment at all refineries to eliminate this form of attack.

T.C.P. Described

Socony reveals new process to decolorize lubes, waxes

NEW YORK.—A new, lower-cost process for decolorizing lube stocks and waxes was announced last week in a paper on "Thermofor Continuous Percolation" by four members of Socony-Vacuum Research and Development Laboratories.

The authors: L. P. Evans, K. E. Magin, J. I. Savoca and H. W. Shea, outlined process details and performance data on a 500-bbl. per day demonstration plant before a technical session mid-year meeting of the American Petroleum Institute's Refining Division.

The process employs a moving bed of conventional percolation clay through which solvent-refined and acid-treated oils and waxes are percolated upward, for counter-current decolorizing. No naphtha dilution is required.

Continuous, countercurrent naphtha washing of spent clay, gives better washing efficiency than the static-bed process, yielding a recycle oil with little color-body removal from the clay. Naphtha carried over from the washing step is completely recovered in the clay drier, from which the clay emerges moisture-free. Naphtha and agitation steam withdrawn overhead from the drier, are cooled and naphtha is separated from condensed water and recycled to the wash tower.

Dry clay is then lifted to the conventional Thermofor clay burning kiln for regeneration and return to the top of the percolator tower.

Favorable economics . . . By comparison with static-bed percolation and hot contacting, the T.C.P. process shows favorable pilot plant and semicommercial plant performance. Economic comparisons, considered as representative by the authors, indicate that a T.C.P. unit costs about 20 per cent more than a modern hot-contacting unit with a precoat filter. However, the difference would be paid out in less than 1 year by the reduction in operating costs and lubricating-oil loss. A very large economic advantage is claimed over static-bed percolation based on both initial investment and operating cost.

A 2,100-bbl. per day T.C.P. unit is now under construction at Coryton, England, and a 3,000-bbl. per day plant has been licensed for erection in Holland. Numerous other projects were reported under consideration.

The T.C.P. paper will be presented in full, together with schematic diagram of the process, in the engineering section of the June 8 issue of The Oil and Gas Journal.

Turbine Cost Outlined

Operating data on one of pipe-line industry's first such installations presented before annual S.G.A. convention

NEW ORLEANS.—Operating costs for one of the industry's first gas-turbine installations on a major gas-transmission line were outlined here last week before the annual convention of Southern Gas Association by George White, engineer with Tennessee Gas Transmission Co.

White described the company's gas turbine used to drive a centrifugal compressor at the company's Station 110 at Morehead, Ky. As of March 1, he said, the unit had run continuously for 2,649 hours and, including the earlier shakedown period, had operated a total of 4,464 hours.

At full load, White said, the turbine has a thermal efficiency of 25:1 or 10.7 cu. ft. of fuel per brake horsepower hour. The over-all system average for gas engines in 1951, he said, was 9.7 cu. ft.

Besides fuel, the other major item of operating expense is labor, White said, adding that one operator and one auxiliary man are required per shift, with a total of 12 employes at the station, including supervisor, clerk, and maintenance men.

"At present we . . . spend $14 per installed horsepower per year for operating labor," White said.

"Based on 4 months operation, the direct yearly operating cost is calculated to be $22.90 per installed horsepower. The direct operating cost for reciprocating-engine plants averaged $21.32 in 1952. The construction cost accounting for this station is incomplete, but a preliminary report indicates an expenditure of $230 per installed horsepower," White said.

So far, the Tennessee Gas man said, the unit has performed satisfactorily. "However," he continued, "we feel that a period of years is required to properly prove its performance as a gas compressor."

How it works . . . The turbine is controlled from an instrument console in a separate building. Load on the unit is controlled by the speed of the axial-flow air compressor. A recorder controller works in conjunction with a fly-ball-type governor to position an air-operated fuel throttling valve to control speed. Overriding both of these is a limiter actuated by turbine inlet temperature and regenerator inlet temperature.

There is also an electric solenoid valve in the fuel line which will be closed by any of the following: the flame scanner due to loss of flame, excessive vibration, low lube-oil pressure, low seal-oil level in storage tank, overspeed of either wheel, excessive turbine inlet temperature, and the manually operated emergency stop button. The unit is further protected from motoring due to a pipe-line break by the gas booster overspeed and by high and low-pressure switches on the differential of the orifice meter measuring throughput. All of these energize a

circuit which closes the suction and the discharge valve and opens the axial-flow-compressor dump valve, thereby unloading the booster.

There are check valves in the compressor discharge pipe where it ties into the main line. When the turbine is idle these checks are closed. The unit is started simply by opening both suction and discharge valves and bringing the turbine slowly up to speed. A small expansion turbine using pipe-line gas at suction pressure furnishes starting power. When the few pounds pressure required to open the checks is built up, flow is established at a low compression ratio. The main-line block valve may then be closed to bring the unit on the line. A bypass is provided for use in emergency shutdowns.

The maximum allowable load on the machine is reached when the turbine inlet temperature reaches 1,390° F., or when the regenerator inlet temperature reaches 900° F. At this limiting temperature the power available from the turbine varies with its operating conditions.

Polyethylene Report

Production of this fastest-growing petrochemical to make four-fold jump in next 3 years, but newcomers are skittish

George Weber

A FOUR-FOLD increase in polyethylene capacity is in prospect over the next 3 years.

Six companies are now in various stages of construction in nine plants which will boost productive capacity for this versatile plastic, from the present 125-million-pound level to exceed the half-billion-pound mark.

Additional companies are viewing the field with interest, but the recent announcement of extensive new capacity by Carbide & Carbon Chemicals Co. is prompting many prospective manufacturers to reappraise the situation.

That Union Carbide division, whose production is marketed through Bakelite Co., another division, now handles over half the polyethylene sold in this country. Three new plants, and expansion of an existing one, will assure that company the domination of at least half the prospective production in 1955.

Its history . . . Polyethylene as a commercial product is only 10 years old. The first high-quality production of commercial quantities came out of a war-built plant operated by Carbide & Carbon Chemicals at South Charleston, W. Va., in 1943.

That original plant has been successively expanded. Much of the new capacity resulted from improved engineering and production techniques which have increased the production rate per unit as much as six-fold.

Extremely high pressures required for the controlled polymerization of ethylene to polyethylene have made this a costly process. This has accounted in part for the fact that production of this plastic has never approached the extensive demand it enjoys on the strength of its many potential uses.

Its future . . . The future for polyethylene is considered to be particularly bright. To date, military requirements have absorbed much of the supply and only recently did the National Production Authority release its control of allocation.

Its toughness, resistance to corrosive agents, flexibility at low temperature, and superior electrical properties make it an ideal material for a wide range of commercial uses in packaging, insulation, and piping.

From an original price of $1 per pound, it has declined in price to 44 cents and some observers in the industry are of the opinion that this price trend may well continue downward as productive capacity expands.

Who is involved . . . At present polyethylene production is shared by two companies: Union Carbide and E. I. du Pont de Nemours & Co., Inc. During the next 3 years, four more producers will enter the field, unless their present plans are altered. They include: Spencer Chemical Co., Orange, Tex.; National Petro-Chemicals Corp., Tuscola, Ill.; Dow Chemical Co., Freeport, Tex.; and Monsanto Chemical Co., at a site not yet determined.

In addition, Texas Eastman Co., a division of Eastman Kodak Co., is considering the addition of polyethylene facilities at the Longview, Tex., plant. This project was originally planned to include production of high-melting-point polyethylene waxes, and a necessity certificate covering $7,000,000 in plant cost has been granted the company.

American Petrochemical Corp., jointly owned by Cities Service Co. and Firestone Tire & Rubber Co., recently suspended initial construction work on a polyethylene plant at Lake Charles, La. The company is now reappraising processes and product markets, and no decision on future plans has yet been reached.

Goodrich-Gulf Chemicals, Inc., another joint venture, owned by Gulf Oil Corp. and B. F. Goodrich Co., is understood to be considering polyethylene production at the projected Orange, Tex., plant located near Gulf's expanding ethylene facilities at Port Arthur.

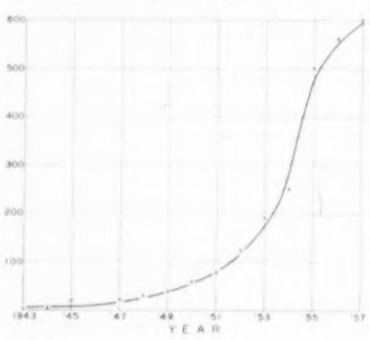
Dominating the new construction for this plastic is Carbide & Carbon Chemicals with three new plants now building. Each will be capable of producing over 60 million pounds annually, which together with the existing 70-million-pound plant, will provide Bakelite with over a quarter billion pounds of polyethylene to market before the end of 1955.

The three new plants are located near supplies of natural and refinery gas, at Texas City and Seadrift, Tex., and Torrance, Calif. The Torrance plant will be the first on the West Coast and will derive charge stocks from the adjacent refinery of General Petroleum Corp.

A projection of assured new capacity for polyethylene, plotted in the accompanying chart, indicates a continuation of the geometric rise in this new plastic. This rapid expansion will outstrip estimates of some of the industry's more optimistic market analysts over the past 2 years. Based entirely on petroleum-derived ethylene, the plastic material is now heralded as the leader in its field for the future.

Polyethylene Capacity

(Million pounds per year)



Lion Gets Top Safety Awards

EL DORADO, Ark.—Two Awards of Honor, highest industrial recognition for achievement in safety made by the National Safety Council, have been presented to Lion Oil Co. for safety records set by the company during 1952.

The awards were won by the company's manufacturing department, con-

sisting of the refinery and chemical plant at El Dorado, for working more than 3,000,000 man-hours without a disabling injury, and by the company as a whole for "a remarkable reduction in the frequency and severity of accidents."

Esso Imports Below Estimate

NEW YORK. — Esso Standard Oil Co. and the affiliated Esso Export Corp. imported an average of 90,000 bbl. daily of crude oil and 165,000 bbl. daily of residual fuel oil in the first quarter. These figures were announced last week by Esso Standard which pointed out the first quarter rate was lower than the estimates given the Texas Railroad Commission earlier this year.

Preliminary figures for April imports by the two companies indicate a decline for the first-quarter rate. The preliminary April totals were 77,000 bbl. daily crude and 146,000 bbl. daily residual fuel oil.

Final figures for imports of the companies during March were 70,000 bbl. daily of crude and 164,000 bbl. daily of residual fuel oil.

Smog Law Adopted

Oil firms with gasoline storage near Los Angeles must spend $7,000,000 in 2 years to control escaping vapors

D. H. Stormont

LOS ANGELES. — Oil companies with gasoline-storage tanks in the Los Angeles area will spend approximately $7,000,000 in the next 2 years to prevent vapors from escaping into the atmosphere.

The control law, Rule 56, was adopted at a late-April meeting of the Air Pollution Control District. The oil industry, in the belief that escaping hydrocarbons, especially unsaturated compounds, might be contributing to air pollution, offered no opposition to the program.

According to the new regulation, between now and May 1, 1955, all tankage of more than 40,000-gal. capacity in which gasoline, or any "petroleum distillate having a vapor pressure greater than 1.5 psi.," is stored will have to be equipped with vapor-recovery equipment or converted to the floating-roof type

Provisions . . . To assure that the program is put under way promptly Rule 56 further provides that:

1. All cracked-stock tanks with a capacity of 400,000 gal. or more must be controlled by February 1, 1954.

2. All cracked-stock tanks with a capacity of less than 400,000 gal. must be controlled by August 1, 1954. In cases where more than one such tank is involved, the program will have to be complied with on at least 50 per cent of total capacity by May 1, 1954.

3. All tanks with a capacity of 400,000 gal. or more which store gasoline or petroleum distillate other than cracked stocks must be controlled by February 1, 1955.

Number and location of the tanks of 40,000 gal. and greater capacity and containing gasoline or petroleum distillate having a vapor pressure more than 1.5 psi., is shown in the accompanying table. Most of the tanks of the seven largest companies will need no work, and more than half of the total capacity is already controlled.

Why controls are necessary . . . Uncontrolled tanks at refineries, tank farms, bulk-storage stations, and shipping terminals are thought to be major contributors to Los Angeles' smog problem. This is believed to be true particularly of cracked gasoline and other light cracked stocks because of their unsaturated hydrocarbon content. Oil-company officials working with the control group do not believe crude and saturated hydrocarbons are offenders.

A recently completed study revealed that refineries in the Los Angeles area are allowing about 250 tons daily of saturated and unsaturated hydrocarbons to escape into the air. Losses of gasoline and light petroleum-distillate vapors are believed to amount to 140 tons daily. Completion of the program will reduce these by 120 tons, it is estimated.

Because motorists and trucks contributed about 800 tons daily of exhaust vapors into the air, the program is not expected to make too much of a dent in the city's smog problem.

When provisions of Rule 56 are completed 2 years from now, some company officials expect the next step will be a similar regulation for crude and all petroleum products. When this happens, they say, they will have done everything technically and economically possible on the basis of present knowledge to avoid air pollution.

Tankage Affected by New Smog-Control Law

(Capacity: 40,000 gal. or more)

Location—	Controlled— No. of tanks	Controlled— Capacities in bbl.	Uncontrolled— No. of tanks	Uncontrolled— Capacities in bbl.	Totals— No. of tanks	Totals— Capacities in bbl.
Major refineries (7)	215	10,448,300	183	3,647,000	398	14,095,300
Independent refineries* (13)	7	88,000	203	4,507,000	210	4,595,000
Marine terminals* (17)	20	1,221,000	59	1,606,900	79	2,827,900
Bulk plants† (50)	20	544,300	27	149,800	47	694,100
Tank farms* (15)	12	995,000	23	1,514,000	35	2,509,000
	274	13,296,600	495	11,424,700	769	24,721,300

*Figures include tanks leased by U. S. Government. †Data for bulk plants approximate as survey not completed.

Unusual Field

It may not be large, but it's shallow and prolific

LOS ANGELES.—The recently discovered South Tapo Canyon field 40 miles northwest of downtown Los Angeles may never reach the status of a major field but it's yielding some very desirable producers.

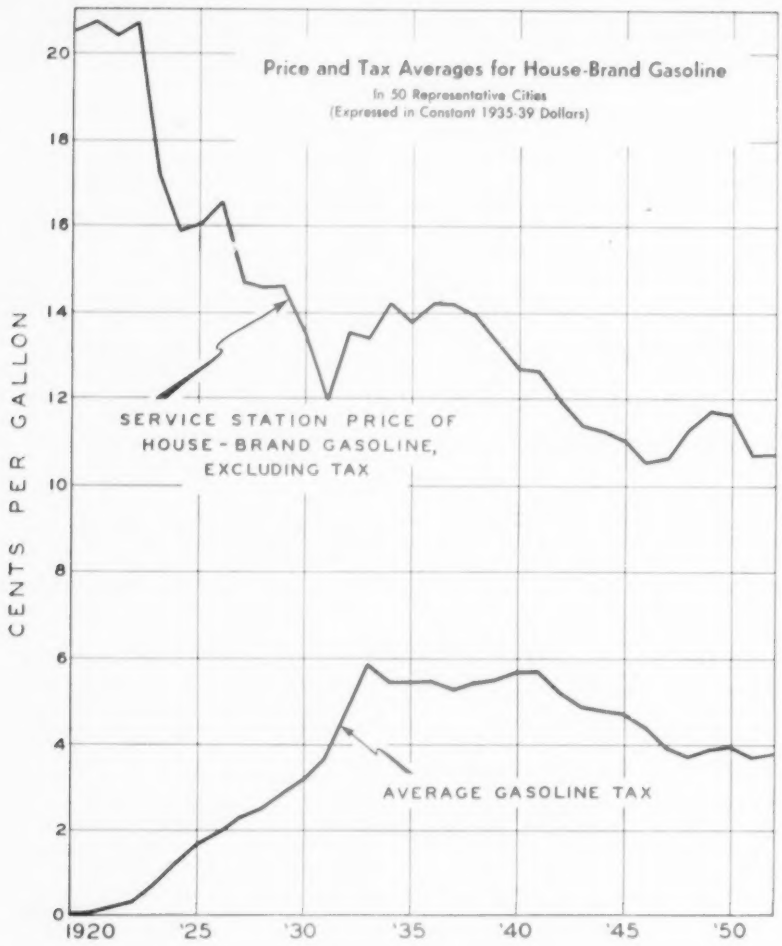
Discovery well of the 2,000 to 2,500-ft. upper Miocene sand pool was completed by Terry Drilling Co. in February for about 600 bbl. daily. Union Oil Co. promptly offset the Terry 2 Tapo with 1 Simi, another 600 bbl., 33° gravity producer.

Since then Terry and Union have completed three more producers each, all close to the discovery. The lowest initial production of these was a 50-bbl. pumper by Union, its second well.

Union bounced back with its third well. It was completed flowing 306 bbl. of 32° crude daily but when placed on the pump produced 1,000 bbl. daily and higher for more than 10 days.

Terry then brought in 4 Tapo as the best completion to date. Bottomed in 100 ft. of sand at 2,610 ft., late in April it was completed flowing at the rate of 1,570 bbl. daily. The day following completion it produced 1,200 bbl. of 33.8° gravity clean crude.

Indications are that the field will not be extensive; that the two present operators control all acreage. It is believed that the wells are producing from the same portion of the Modelo sand as did two abandoned 400-ft. producers immediately south of the Terry discovery. It thus appears there is faulting between the two groups of wells, with the downthrow on the north.



Price-Tax Comparison

Figured in constant-dollar terms, gasoline is a cut-rate special on today's shopping lists, not counting the tax

John C. Casper

THE average price that a motorist pays for gasoline today, exclusive of state and federal taxes, is about half the average paid in the 4-year period from 1919 through 1922.

This comparison is based on data now collected and compiled by The Texas Co. but which was started by The Oil and Gas Journal over 30 years ago. Reports cover 50 representative cities and show prices and taxes as of the first of each month. The annual figures used to calculate the trends shown on the accompanying chart are the average of monthly figures for each year.

These reported price and tax averages are converted to a constant dollar basis by dividing each year's price and tax by the consumer price index for that year. The index used was by the Department of Labor with the average for 1935-39 taken as 100. In the years before 1945, this series was known as the Cost of Living Index.

The price trend line on the chart shows the comparison of gasoline prices with the cost of consumers of all items such as food, apparel, fuel, rent, and services required by a moderate-income family. A horizontal line across the chart would have meant that the price of gasoline varied exactly with the average for all items. The actual line with the steep downward slope indicates that gasoline costs about half as much today as it did in 1920 in terms of other consumer goods and services.

Despite the drop in relative price, the quality of gasoline has continued to improve.

The lower line on the chart shows that the greatest relative increase in gasoline tax came in the 10-year period from 1923 through 1933. Because of the devaluation of the dollar, the motorist is paying less actual tax on gasoline today in constant dollars than he was 10 or 15 years ago.

CANADA

Looping Contract Let

EDMONTON, Alta. — Interprovincial Pipe Line Co. has let contract to Anderson International Contractors, Ltd., Edmonton, for construction of 135 miles of 24-in. looping between Regina, Sask., and Gretna, Man., on its present main-line crude system.

Work on the project is scheduled to start immediately and be completed by early October.

The looping project plus a planned boost in capacity of certain of the company's pump stations will increase capacity of the system out of Regina to 121,000 bbl. daily; out of Cromer, Man., to 127,000 bbl. daily; and out of Gretna, to 111,500 bbl. daily. Of the latter volume, about 28,000 bbl. daily will be allocated for tanker liftings and crude supply to refineries in the Superior, Wis., area. The remaining 83,500 bbl. daily will be shipped through the 635-mile extension to Sarnia, Ont.—now under construction.

Anderson International will work from east to west on the looping project. The contractor reportedly will establish field headquarters successively at Morden and Souris, Man., and at Kipling and Regina, Sask.

Calgary Oil Firm Sold

CALGARY, Alta.—Anglo-American Exploration Co. has purchased Gas & Oil Products, Ltd., and subsidiaries in a deal reportedly involving an outlay of several million dollars.

The transaction makes Anglo-American one of the largest independent oil companies in Canada.

Announcement of the sale was made jointly by S. C. Nickle, Sr., head of Anglo-American, and by William Jeffrey, president of Gas & Oil Products.

The latter firm owns a 3,000-bbl. daily refinery in Turner Valley and dis-

tributes products throughout the prairie provinces.

In addition to Gas & Oil Products, Ltd., the deal included the sale of the following: Patron Oil Co., marketers in Saskatchewan; Gas & Oil Refineries, Ltd., operators of the Turner Valley plant; Valley Oil Operators, Ltd., operators of 25 Turner Valley wells; and Phoenix Oils, Ltd.

Additional Storage Planned

EDMONTON, Alta.—Interprovincial Pipe Line Co. will make an approximate outlay of $225,000 here this year in expanding its tank-farm facilities, according to T. S. Johnston, of Toronto, Ont., president.

Johnston said the Edmonton program comprises the construction of three 55,000-bbl. tanks at the pump station, while in addition there will be "sizable" warehouse facilities. With the additional tanks, the company will have a total capacity at the tank farm here of 1,089,000 bbl.

"Our whole expansion program this year includes an expenditure of $12,000,000 in Canada," Johnston said.

SOUTHWEST

Appeal Date Set

Argument slated May 27 on Spraberry injunction

AUSTIN.—Oral arguments before the Texas Supreme Court will take place here May 27 on a move to have set aside a lower court decision that oil wells in Spraberry Trend Area field from which no gas is flared, may continue on production while all others must remain shut in.

A direct appeal to the Supreme Court was filed earlier by Texas Atty. Gen. John Ben Shepperd on behalf of the Texas Railroad Commission. Bypassing intermediate courts is permissible in Texas in cases involving the validity of orders by state regulatory agencies.

The Railroad Commission ordered the entire field, in which there are approximately 2,200 wells, shut in April 1 for excessive flaring. The volume of gas flared daily was judged to be about 220,000,000 cu. ft. daily.

Operators in the field which were selling or otherwise utilizing all of the gas produced by their wells promptly filed five consolidated lawsuits seeking a restraining order which would permit them to continue production. The injunction was granted and later made permanent by District Court Judge Charles O. Betts *(The Oil and Gas Journal, May 4, page 67)*.

The commission termed this action a blow at the entire shutdown order, contending that, if allowed to stand, it would in effect give operators who are allowed to produce permission to drain properties of those who are not.

Pending decision of the Supreme Court, the commission has subjected wells producing under the injunction to the state's allowable producing-days schedule fixed under the market-demand statute. These wells will be permitted to produce 20 days in May.

Exceptions granted . . . Phillips Petroleum Co., under an exception granted by the commission, will be permitted to produce enough gas from wells connected to its new Spraberry natural-gasoline plant to allow periodic turnover of the plant engines. The plant has no residue-gas outlet.

Another exception will permit Humble Oil & Refining Co. to produce small amounts of gas from its shut-in wells where paraffin-scrapping operations must be conducted.

Gas produced under both exceptions must be deducted from allowables when the big field is reopened.

Demand-Law Study Slated

AUSTIN.—The Texas Independent Producers and Royalty Owners Association is setting up a special committee to study the Texas oil-market-demand statute with a view to possibly recommending that it be revamped.

M. D. Bryant, San Angelo, president of T.I.P.R.O.A., was instructed by the association to name the committee "to determine whether or not the statute was responsible for this surrender of our market" to imported crude.

The association's executive committee also asked the commission to fix future allowables high enough to permit Texas to recover a substantial portion of the "400,000-bbl.-daily production lost to foreign imports."

"Allowable cutbacks in Texas as a result of excessive imports costs the state economy more than $1,000,000 a day, including about $40,000 a day loss in state revenue alone," Bryant said.

Ammonia Project Planned

AUSTIN, Tex.—Phillips Chemical Co. is planning to store ammonia in a washed-out salt cavern in Moore County, Texas.

Plans for such underground storage have been outlined before the Texas Railroad Commission in an application for permission to undertake the project.

R. K. Simms, Phillips' chief processing engineer, said it is planned to drill five wells into a 50-ft. salt section at about 2,000 ft. and to wash out caverns in the salt formation. Each well, he said, would have a capacity of 30,000 to 35,000 bbl. The company, he said, anticipates one fillup and one emptying of the reservoirs each year.

Closer Calculation Sought

AUSTIN.—The Texas Railroad Commission is asking purchasers of Texas crude oil to supply information on how many days supply they have on hand for current operations in a move to determine more accurately the demand for the state's production.

The buyers who nominate for Texas crude were asked, in telegrams sent by the commission, to exclude pipe-line fill, refinery charging stocks, tank-farm requirements, and oil below tank connections.

Chairman Ernest O. Thompson of the commission told the companies "we want to ascertain how much readily dispatchable crude you have in days' requirements. We feel that the old practice of dividing the so-called crude in storage by the daily refinery runs is at the present time inadequate upon which to calculate demand for Texas crude."

Thompson said the apparently large crude stocks presently carried in reports on crude in storage may not look so large and forbidding when the asked-for data is supplied. In reality, he said, it is the days' supply of dispatchable crude that should and must be considered in trying to ascertain the market demand for Texas oil in June.

Flood Expansion Asked

AUSTIN.—Permission to expand a water flood in the Mirando sand of Mirando City field in Webb County, Texas, has been asked of the Texas Railroad Commission by Amigos Oil Co.

James F. Ross, Amigos president, said when original water injection was started production totaled 4 bbl. daily from two wells. Production now is up to 40 bbl. daily from three wells, he said.

The company asked permission to convert oil or gas wells or dry holes to input wells, drill additional water or injection wells, apply a partial vacuum where desired, and change assignment of allowables to a lease basis.

Milton C. O'Neal, company spokesman, told the commission the proposed water-flood project is expected to recover an additional 5,000 bbl. per acre,

using an open-type gravity system with an injection rate of 200 to 300 bbl. of produced water daily. Original oil in place was estimated at 20,000 bbl. per acre. First well in this stripper field was completed in 1921.

Premier Adding Fluid Unit

FORT WORTH.—Premier Petroleum Co. broke ground May 8 for a new fluid catalytic cracking unit at its Fort Worth plant, according to announcement made to the Journal by R. P. Hargis, vice president of Premier.

Besides the new F.C.C. unit, which has a design capacity of 3,000 bbl. per day, Premier's expansion at Fort Worth will include a polymerization unit and gas-recovery plant. The F.C.C. and associated units were designed by Universal Oil Products Co.

Premier's refinery at Fort Worth has a crude-oil charging capacity of 7,500 bbl. per day. The refinery operates on Ranger crude.

The Fort Worth expansion program will cost $2,000,000. Completion is scheduled for early 1954. This modernization work follows the addition to the plant of a 1,750-bbl. Platformer unit.

Besides the 7,500 bbl. per day Fort Worth refinery, Premier has three other plants: Longview, Tex., capacity 4,000 bbl. per day; Arp, Tex., 4,500 bbl. per day; Baird, Tex., 2,300 bbl. per day. A new 4,000-gal. poly unit at the Longview refinery has just been completed.

In connection with Premier's crude-oil requirements, the company operates a 700-mile pipe-line system serving its various refineries.

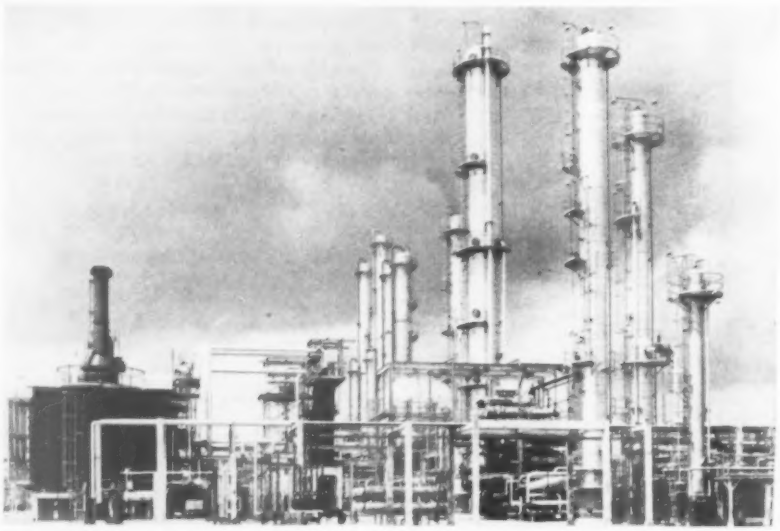
Wimberly Flood Asked

AUSTIN.—The Wimberly Field Unit has applied to the Texas Railroad Commission for permission to conduct a peripheral water flood in the Upper Hope and Gunsite reservoirs of Wimberly field, in Jones County.

The Gunsite has 987 productive acres and lies at about 2,430 ft. This reservoir has 58 completed wells. The Upper Hope has 31 wells within the Wimberly Unit. The unit plans to use two injection wells in the Gunsite and one in the Upper Hope.

Dalton Moore, Jr., spokesman for the unit, told the commission that other reservoirs in the unitize field already are being flooded. Injection water would be produced water and make-up from the reef.

GULF COAST



WORLD'S BIGGEST PLATFORMER is this unit at Shell's Pasadena refinery. Design capacity is 16,000 bbl. per stream day for motor fuel and 13,000 bbl. per stream day for aromatics.

New Units on Stream

Shell operating integrated Platformer-aromatics plant

HOUSTON.—Shell Oil Co., at its Pasadena refinery, has placed on stream its new integrated U.O.P. Platformer-Shell Aromatics Extractive Distillation plant.

As a petrochemical operation it will turn out 19,000,000 gal. of benzene and 33,000,000 gal. of toluene yearly. This production of aromatics will add about 10 per cent to the nation's annual domestic output of benzene and will greatly increase the volume of toluene. This is in addition to the plant's aromatic and nonaromatic byproducts which are blended into aviation gasoline, motor fuel, and special products.

The Platformer, designed and licensed by Universal Oil Products Co., is the largest one put into operation by U.O.P. since the first Platforming unit went on stream some 3½ years ago.

This new unit of Shell's has a design charge rate of 16,000 bbl. per stream day for motor-fuel production, and 13,000 bbl. per stream day for aromatics. Present production is confined to benzene and toluene, and no motor-fuel operation is contemplated in the immediate future.

One outstanding feature is the use of turbine-driven centrifugal compressors to circulate hydrogen recycle gas through the system. Another is the use of "Turbo-grid" trays, developed by Shell, instead of bubble trays in the fractionation and absorption columns. The distillation columns of the extractive unit range up to 10½ ft. in diameter and are 163 ft. high.

Feed . . . There are three phases to the refinery's processing, of which the initial one is the feed preparation.

Light naphthas are distilled from East and West Texas crudes, then blended with a selected naphtha cut shipped from Shell's refinery at Wood River, Ill. The feed-stock mixture is charged to the Platforming feed preparation unit and other similar units, and fractionated to provide narrow range feed stock containing nearly all of the C_7 and C_8 fractions.

Feed stock is then charged from the fractionators to the Platformer, where the catalyst which contains platinum reforms components of the feed stock into aromatics.

Gas . . . Reactor effluent is separated into a liquid and a gas stream. Part of the gas stream is vented to refinery fuel through an absorber to recover light hydrocarbons, including benzene. The rest is recycled to the process through a gas scrubber to remove and recover hydrogen sulfide.

Aromatics . . . The third step in the refinery's process consists of depentanizing the liquid stream and charging it to the aromatic-recovery unit, where the aromatic hydrocarbons are separated and purified.

Imports-Quotas Plea

Independents appeal for restrictions on crude shipments from abroad, but they duck coal's bid for residual limits

Bertram F. Linz

WASHINGTON.—Domestic oil and coal interests presented strong arguments for imposition of a quota on oil imports and the importing companies defended their policies with equal vigor before the House ways and means committee last week.

There are indications, however, that the bill to be brought out of committee, possibly before the end of the month, extending the Reciprocal Trade Agreements Act for 1 year, will carry no provision for an oil quota and few, if any, of the amendments proposed by Rep. Richard M. Simpson of Pennsylvania to strengthen the peril-point and escape-clause provisions of the present law.

A compromise being discussed would pass up practically all amendments except one adding a seventh member to the Tariff Commission to avoid split decisions like the one which prevented action on the domestic producers' appeal for relief last year. In return, assurance would be given that commission action on appeals for relief would be speeded up and that concrete proposals for revision of the law, quite possibly including an oil quota, would be submitted by the administration next year.

Testifying before the committee on behalf of the quota proposal were Rep. Charles W. Vursell of Illinois, Clyde M. Foraker, president of the Ohio Oil and Gas Association; Russell B. Brown, general counsel, and Charlton H. Lyons, president, of the Independent Petroleum Association of America; J. P. Coleman, president of the National Stripper Well Association; B. L. Majewski, president of the Great American Oil Co., Chicago; J. R. Butler, of J. R. Butler & Co., Houston, Tex.; A. S. Ritchie, Kansas Independent Oil and Gas Association; J. P. Jones, New York State Producers Association, Bradford Pennsylvania Grade Crude Oil Association and the Middle District Pennsylvania Oil Producers Association; and H. B. Fell, president of Simpson-Fell Oil Co., Ardmore, Okla.

Stripper-well threat . . . While the group vigorously urged that imports be limited to 10 per cent of domestic demand as against an anticipated 14 per cent this year if present levels are maintained, they gave no support to the plea of the coal industry for a 5 per cent quota on residual-oil imports and, in fact, opposed it as paving the way for even greater imports of crude than are now coming into the country.

The oil men warned that continuation and an increase of the present volume of foreign oil would starve stripper-well production out and bring about serious curtailment of secondary-recovery efforts. As an example of the effect of high imports, Foraker told the committee that his group faces a complete loss of market for Corning grade oil when the present purchase contract expires at the end of the year and if this occurs it will curtail nearly half of the current production and result in abandonment of many wells in the most productive fields in Ohio, a severe reduction in employment, drastic losses to farmer royalty owners, and loss of reserves to the nation.

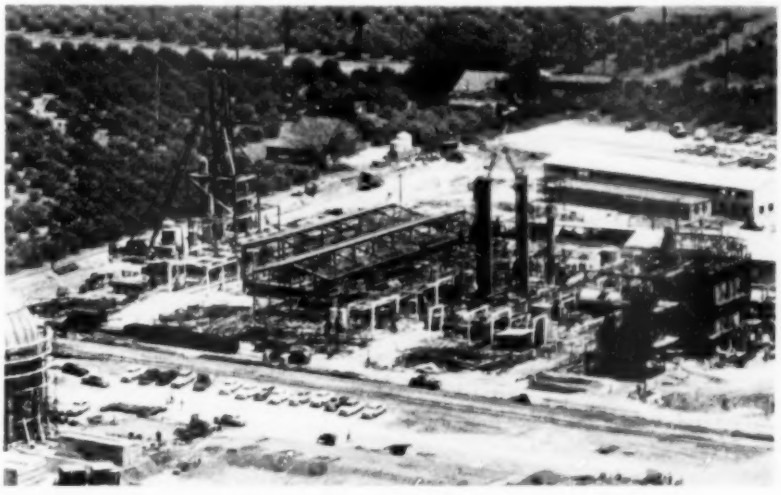
Brown told the committee it is faced with a choice between continuing imports and inevitable dependence on foreign sources of supply, or a reasonable limitation in imports so that both foreign and domestic production will be assured a fair share of the market.

Any domestic conservation program will fail of fullest achievement until some control of imports is provided, Brown asserted.

Threat to drilling . . . Heavy imports already have resulted in a deficit of 9,000 wells in the domestic industry's 1953 drilling schedule, Lyons charged, explaining that drilling now is at the rate of 46,000 wells a year as against a recommended 55,000 wells.

If present rates of imports continue, drilling will be even further curtailed, Lyons said, and the industry will become unable to supply the increasing volume of oil necessary to our expanding economy and defense program.

The threat to reserves was developed by Coleman, who pointed out that the 321,000 stripper wells of the country, now accounting for nearly 1,000,000 bbl. of oil a day, have a potential recoverable reserve by secondary-recovery methods of more than 3,000,000,000 bbl. This is high-cost production, he explained, and secondary recovery could not be attempted and many present pumping wells would have to



Ammonia Plant Nearing Completion

New design features are being built into this ammonia plant being erected for Shell Chemical Corp. at Ventura, Calif. A unique feature will be a synthetic-gas reformer which will operate at higher-than-normal pressures. Since natural gas is available under pressure, this reformer will conserve the energy and reduce the need for compressor capacity by an estimated 25 to 35 per cent in the later ammonia-synthesis stage. Scheduled for completion late this summer, the plant is being built by M. W. Kellogg Co. Design capacity of the plant is in excess of 150 tons of anhydrous ammonia per day.

be abandoned if imports continue to depress prices.

Challenging the idea that the 1,000,000 bbl. daily production now shut in constitutes a cushion in the event of war, Fell declared that a true reserve is capacity above requirements.

Residual-limit plea . . . Following the domestic oil men a dozen representatives of the coal and railroad industries argued in behalf of their plea for a 5 per cent quota on residual fuel oil.

They told the committee that legislation is the "only answer" to their particular problem, taking issue with Interior Secretary McKay's suggestion that the coal industry take advantage of the escape clause provisions by appealing to the Tariff Commission for relief.

Even if the Tariff Commission were to impose the maximum rate authorized on residual oil imports, it was asserted, the oil companies could absorb the additional charge without any effect upon either the price or volume of imports.

Opposition testifies . . . A long list of witnesses appeared in opposition to oil quotas, including top officials of six oil companies, spokesmen for three marketers' associations, and representatives of other interested organizations.

Testifying for the companies, B. Brewster Jennings, president of Socony-Vacuum Oil Co., Inc.; S. A. Swensrud, president of Gulf Oil Corp.; Eugene Holman, president of Standard Oil Co. (N. J.); R. G. Follis, chairman of the board of Standard Oil Co. of California; J. W. Foley, vice president of The Texas Co., and Arthur T. Proudfit, president, and Harold W. Haight, executive vice president of Creole Petroleum Corp., contended that imports are not injuring the domestic oil producers and have not been responsible for the reduced demand for coal.

Foreign oil is particularly important on the West Coast, Follis asserted, pointing out that it has only been through heavy imports from the Middle and Far East that California has been able to meet the requirements of its domestic economy and the most vital portion of the military demand during the past 2 years, and there is no indication the situation will change in the near future.

The basic arguments against a quota advanced by the company spokesmen were that it would constitute a breach of our trade agreement with Venezuela, injure our political and commercial relations with the oil-producing countries, create a less favorable climate for American investments abroad, and jeopardize military fuel supplies and adversely affect our defense.

Surplus temporary . . . The present oversupply of oil which has heightened the demand for import limitations is "definitely temporary" and part of a recurring cycle of oversupply and shortage, Foley told the committee.

"Even at this time domestic crude continues to be in short supply on the West Coast," Foley said. "What is being viewed with alarm as a possible over-supply on the East Coast is sure to be followed by another period of shortage."

Company officials pointed out that while fewer rigs were active in the first quarter of this year almost exactly as many wells were drilled as in the same quarter in 1952 and wildcat completions actually increased. The decline in production was less than one-half of one per cent from the last quarter of 1952, which was the highest for any quarter in the industry's history.

In the long run a trend toward increasing imports is desirable and necessary if we are to have the oil we need in this country, Swensrud told the committee, but there are and will be periods from time to time when for one reason or another total oil supplies advance more rapidly than demand.

"During such time, imports along with domestic production must be subject to adjustment in a flexible way," Swensrud said. The importers as well as the domestic producers appreciate the problem "and can be relied upon to exercise reasonable self-restraint when the facts become clear," he added.

"My plea, therefore, would be that we do not, for the sake of solving a very short-term problem, enact legislation which would be detrimental to the long-run interest of our nation and the millions of American oil consumers who depend upon an ever-increasing abundance of oil at reasonable prices," Swensrud declared.

Tax-Law Study Set

WASHINGTON.—The House Ways and Means Committee will open several weeks of hearings on the tax laws June 16, with the depletion allowance one of the subjects to be studied.

The hearings will be part of the committee's over-all investigation of the tax structure which is expected to result in an overhauling of the revenue code next year.

The fact that the depletion allowance will be one of a long list of tax provisions to be discussed does not mean that the new treasury administration is preparing to continue the effort made under President Truman to abolish it, although, since the allowance for oil and gas is higher than that for other resources, there may be some suggestions for modification of the rate—now 27½ per cent.

House Accepts Bill

Senate version of tidelands measure goes to President

WASHINGTON. — The long-drawn-out congressional controversy over the ownership of the oil and other resources of the submerged lands was finally terminated May 13 when the House accepted the Senate bill restoring to the coastal states their title to the lands within their seaward boundaries and sent it to the White House for the promised approval of President Eisenhower.

The measure was approved after the House passed a new bill providing the machinery for federal administration of the Continental Shelf beyond the state boundaries, originally included in the House "quitclaim" bill but dropped to avoid controversy with the Senate.

The House action fended off the possibility of another filibuster by Senate opponents of state ownership which might have developed had the bill gone to conference. This would have necessitated its return to the Senate for approval of the conferees.

Another fight . . . A bill dealing with federal administration of the Continental Shelf will be introduced in the Senate within a few days and may be the subject of another fight, this time over whether and to what extent the coastal states shall share in the revenues collected by the federal Government from exploration and development.

After passing the bill providing for federal administration of the outer-shelf area by a vote of 309 to 91, the House accepted the Senate "quitclaim" bill by a vote of 218 to 116.

The legislation recognizes the states' rights to the lands between low-water mark and the 3-mile limit except in the case of Texas and the west coast of Florida, where the limit is 10½ miles. With the legislation out of the way, interest now centers on whether the states of Rhode Island, West Virginia, and Arkansas will sue in the courts to nullify it, as they have threatened.

Tamm May Hear Cartel Case

WASHINGTON. — The Government's civil "cartel" case, if heard in Washington, will be tried before District Court Judge Edward A. Tamm,

WATCHING WASHINGTON

Bertram F. Linz

Restore Those Cuts . . .

Decision of the House to continue the oil-from-shale demonstration plant at Rifle, Colo., for another year over the recommendation of its Appropriations Committee that it be closed will be followed by an appeal to the Senate for restoration of a $476,800 fund eliminated by the House for the continuance of research on shale at the Bureau of Mines' station at Laramie, Wyo.

The necessary equipment for the Laramie oil-shale research laboratory has just been secured, according to J. J. Forbes, director of the bureau, and to idle it would make the overhead of the station so great it would be inefficient to maintain.

Of the two installations, Forbes said, the Laramie laboratory is more important than the demonstration plant at Rifle. It is designed to develop new and cheaper processes and bench-scale equipment for the production of oil from shale which should be continued even if the work at Rifle is concluded.

The Laramie station already has proved its value, according to Forbes in developing a high-temperature retorting one-step process for producing a highly aromatic low-boiling oil from shale which is a suitable component for aviation gasoline and contains large amounts of benzene and toluene, currently in short supply for the production of synthetic rubber, and a variety of essential chemical products.

Oil's Tax Outlook

Extension of the excess profits tax for at least 6 months after June 30 or an increase of 1 or 1½ points in the corporation tax rate appears to be in the cards for corporations in the oil and other industries.

The administration has admitted that it cannot cut the Truman budget to the point where it can willingly accept any reductions in taxes this year, and the outlook for a balanced budget within the next 15 months is far from optimistic.

Sometime next month Congress is expected to know definitely whether it should pass the Reed bill moving up the expiration of the Korea hike in personal income tax rates to coincide with termination of the excess profits levy.

Administration leaders, however, are talking of continuance of the tax or, at best, the substitution of an increase in corporate rates. Industrialists who have discussed the matter with them are suggesting that of the two they prefer continuance of the excess profits tax.

They explain that the excess profits levy is very unpopular, whereas income taxes are accepted as a matter of course. Therefore, it is argued, it would be easier to get rid of an objectionable levy than to secure revision of regular tax rates.

DPA Is a Question

The Senate is considering extention of the Defense Production Act this week but what it will pass is anybody's guess, and even more uncertain is the form the legislation will take when it finally goes to the President for approval.

The Senate has before it the Capehart provisions authorizing the President to impose a 90-day freeze on prices, wages and rents in the event of an emergency. Proposed as a means of avoiding the long delays encountered in two wars in getting inflation under control, critics of the plan assert the President's authority, as now written, would not be limited to war but could be exerted to deal with an economic emergency that might arise.

If the Senate does accept the standby controls they are certain to run into stiff opposition in the House, where Rep. Jesse P. Wolcott of Michigan, chairman of the Banking Committee, has asserted publicly he will not agree to any form of control legislation.

During Senate hearings on the measure, representatives of the oil industry, recollecting their experience under two wartime price-control agencies, vigorously opposed standby controls as did spokesmen for practically every other industry.

The provisions were approved by the committee despite industry opposition, on the argument by Sen. Homer E. Capehart of Indiana, its chairman, that he was seeking actually to provide interim controls so that industry would have time to participate actively in the writing of emergency legislation and thus avoid errors which were made and repeated in the past.

who, before his appointment to the bench in 1949, was connected for many years with the Federal Bureau of Investigation.

First action to be taken by Judge Tamm probably will be to rule on motions of four of the five major companies involved to transfer the case to New York. A similar effort was made unsuccessfully during the maneuvers in the now-terminated grand jury investigation of an alleged international cartel ordered by former Atty. Gen. James P. McGranery last year.

It is not expected that Judge Tamm will be able to start the oil-case proceedings for about 2 weeks.

ROCKY MOUNTAIN

Oil-Firm Purchase Planned

DALLAS.—Beaver Lodge Oil Corp. officials will soon present for stockholders approval a plan to acquire the stock and properties of Tioga Petroleum Corp., oil and gas producers in North Dakota, New Mexico, and Oklahoma.

Critchell Parsons, Beaver Lodge president, said here that Tioga now has production from 34 oil wells and one gas well and holds a purchase option on 15,500 net royalty acres of partially developed land in Blanco field, New Mexico.

Beaver Lodge now has production from 11 oil wells in Beaver Lodge and Tioga fields in North Dakota and from 5 gas wells in Blanco field. Parsons said the company plans an intensified drilling program on its Blanco acreage.

Industry Briefs

STATE COLLEGE, Pa.—Refiners processing Pennsylvania Grade crude oil will mark more than 20 years of research on refining problems in a program May 21 at Pennsylvania State College. The event is sponsored by the Pennsylvania Grade Crude Oil Association, which has helped finance refining studies here since 1930. A dinner will honor Dr. M. R. Fenske, director of the petroleum refining laboratory, and his staff.

KILGORE, Tex.—Tex-Jersey Oil Corp., Tyler, Tex., and Great Expectations Explorations Corp. are reported to have purchased Tom Potter's interest in 57 producing oil wells in East Texas field for approximately $2,400,000. All but three of the wells involved in the sale are inside the city limits of Kilgore.

New Oil Law Passed

But companies still are expected to shun operations in Egypt because of serious objections to unsolved questions

Dahl M. Duff

THE Egyptian Government has promulgated a new oil law eliminating the Egyptian company requirement, but other serious objections to a renewal of exploratory work still stand.

One of the most outstanding of these still-unsettled questions is over the pricing of products sold on the Egyptian market. This problem awaits action on the part of the government. Meanwhile, there is little chance that either of the two international companies now in Egypt or any other large operator will undertake exploration pending a satisfactory settlement.

Although many countries attempt to encourage oil exploration by providing a high price for indigenous production, Egypt for years has taken the opposite course. Products prices have been held to levels considerably under those prevailing in world markets.

After lengthy negotiations over this complicated question, the two companies — Anglo-Egyptian Oilfields, Ltd. (Shell), and Socony-Vacuum Oil Co., Inc.—reached an agreement about 2 years ago under which prices would be gradually brought up to world levels by the end of 1954. Last August, the new government of General Naguib repudiated this agreement on grounds the procedure used in passing it was faulty. No further action has been taken since.

"Justified price" . . . Egypt uses a complicated stabilization fund centered on what is called the justified price for products. Gasoline and heavy fuel oil are sold above this justified price, and kerosine, gas oil, and diesel below it. While there is disagreement on what the justified price should be, the stabilization fund itself has had a permanent deficit which the government undertakes to meet. The netback on crude oil based on products sold under such a system is far from satisfactory to the producers.

Shortly after the 1948 Mining Law was passed, Socony-Vacuum and A.E.O., separately or jointly, applied for prospecting licenses on a total of 61 areas on the basis of earlier geological studies. However, exploratory work was help up during the long negotiations over amendments to the 1948 law.

Rights cancelled . . . By a recent ministerial order, the government held that the companies no longer had any priority rights on the basis of these applications since they had not accepted the licenses offered at that time. The Ministry of Commerce and Industry was directed to reserve these areas, presumably for later auctioning under terms of the new oil law.

Also affected by this ruling were a much larger number of applications filed by two unaffiliated companies, Cie. Generale des Petroles and the National Petroleum Co. of Egypt. The effect of this decision was to withdraw from these earlier applicants a large part of the country. Neither Socony-Vacuum nor A.E.O. is expected to go back in and make bids—if this procedure is used—on areas where they already have done some work and on which they feel they have made proper priority applications.

The Ras Matarma block between Asl and Sudr fields on the Sinai Peninsula was found by A.E.O. under an exploration license predating the 1948 law. However, the three wells drilled are shut in and further development has been at a standstill for several years. The terms of the original license under which Ras Matarma was discovered entitled the company to a lease with the same conditions as the old Ras Gharib field except that the royalty was to be 15 and not 14 per cent. The Ras Matarma lease was asked for more than 4½ years ago but has not been granted by the government. The government has also taken no action on a request for renewal of the exploration license covering the Nebwi block on Sinai, although the required work obligations were fulfilled.

Block to new work . . . The government's action on the price problem and its handling of the license and lease applications will block or discourage new work in Egypt, even though the legal obstacles have been removed by the new oil law. The law itself stipulates crude production must first be used to satisfy the needs of Egyptian refineries before any can be exported, and, if there are no assurances that prices obtained for products will be sufficient to provide a reasonable profit, large-scale exploratory work is highly unlikely.

First contract . . . The commerce and industry minister, Dr. Bahgat Badawy, announced that the first contract under the new law had been concluded with Soc. Cooperative Egyptienne de Petrole. This local group received a production and development concession on the Wadi el Feiran area about 120 miles south of Suez. Royalty was set at 22½ per cent. Jersey Standard obtained production in the one well it drilled in this area in 1949 shortly before it withdrew from the country because of the unfavorable legal outlook.

Soc. Cooperative Egyptienne is reported to have interested Southern California Petroleum Corp., Los Angeles, in participating in the operation. Taylor Woodward, Southern California Petroleum's president, some time ago indicated his company was prepared to send certain key personnel to Egypt to manage this drilling and exploration project. The Soc. Cooperative Egyptienne is understood to be seeking financing with the Swiss banking interests who bought the three rigs and other equipment Jersey Standard was forced to leave in the country.

A new warning that Egypt faces a rapidly falling domestic production came recently from G. S. Taitt, A.E.O. chairman. In a speech in Cairo, Taitt estimated that by 1955 domestic production is expected to drop to about half the present rate unless new oil is found and developed. Current imports are costing Egypt about E £13,000,000, or about $37,000,000. The geological prospects for important new production in the Sinai and Red Sea areas are not good, Taitt said. Already 122 unsuccessful exploration wells have been drilled. Drilling in the western desert is likely to be deep and expensive, he added.

How the laws differ . . . The principal difference between the 1948 and the 1953 Egyptian petroleum laws is that the new legislation allows production leases to be granted to Egyptian and foreign companies without discrimination. In other respects, its terms generally follow the provisions of the 1948 act. Considering Egypt's geology and the fact that the fields likely to be found are relatively small and quickly exhausted, it is felt that the country must provide clear-cut and important incentives to attract any significant amount of foreign oil capital.

In addition to royalty, the government, under terms of the law, is entitled to buy up to 20 per cent of the production, either as crude or products, at 10 per cent below world prices. If

not taken in kind, royalty must be moved free through any pipe line built. The 20 per cent the government can buy must be moved free through the first 100 km. of line and then at cost thereafter. If the government does not use the line for moving its oil, a right-of-way rent is levied, graduated on diameter and total length.

Fifty per cent of the area covered in an exploration license can be converted to a 30-year lease at a royalty of 15 per cent. The second half is put up for auction unless the operator elects to take it at 25 per cent royalty. A lease can be renewed for 15 years at a royalty of 25 per cent.

Exploration licenses are granted for a 1-year period renewable for 3 more years if work is being carried out. Rentals are E £10 for the area for the first year, E £100 for the second year, and E £2,500 for the third and fourth year (one Egyptian pound is worth $2.88). License renewals are possible after the fourth year if two rigs are running, but rents are further increased. An auction procedure is provided for areas that have reverted or those that are contiguous to present or prospective production. In the western desert, the maximum area is 400 square km. for exploration, and rent and royalty are lowered a third.

LATIN AMERICA

Brazilian Talk Softer

Amendments to bill setting up government oil monopoly provide slight opening for interested foreign operators

SOME slight softening in the official insistence in Brazil on a national monopoly for oil exploration and development has appeared in a senate committee action on the pending oil law.

Reports from Rio de Janeiro last week said the Petroleo Brasileiro bill had been returned to committee in the senate with amendments which would, under highly restrictive conditions, permit exploratory work by private foreign capital.

The continued exclusion of foreign capital from oil exploration and development has been a political battlecry in Brazil for years. Nationalists have fought bitterly against any move to open the country. On the other hand, the Conselho Nacional do Petroleo has had only modest success, and some influential groups face up to the fact that a tremendous capital inflow is needed to explore Brazil's large sedimentary areas.

In December 1951, President Vargas' administration introduced a bill to establish a government corporation, Petroleo Brasileiro, or Petrobras, which would leave only oil marketing outside state control. As passed by the Chamber of Deputies last September, the bill confirmed a government monopoly. The oil operation was to be financed partly from taxes levied on petroleum consumers. Capital would be built up to the equivalent of a half billion dollars by 1957.

The amendments made to the bill in the senate give only a slight opening for non-Brazilians. They provided that the government could give Brazilian or foreign persons authorization to explore for a period of 5 years in areas where Petrobras was not operating. Even this authorization was made subject to severe limitations.

Restrictions . . . The private exploration would be under official supervision and must take place within 6 months after the concession is granted. All results, including presumably geophysical information, must be submitted to the government in semiannual reports.

Any oil discovered would be developed by the government or by Petrobras or by a company which it would organize with or without the participation of the prospector. In any case, Petrobras would be guaranteed a majority of the directors and managers. Fifty per cent of the value of the production would be attributed to the prospector. This share could be taken in capital in the company which would be organized to develop the discovery.

The method proposed in these amendments is in general somewhat similar to the percentage-of-production contracts which Petroleos Mexicanos has been offering private interests in Mexico for the last 5 years but without notable success. None of the larger companies in the international oil industry could be expected to be interested in such an arrangement. Their general policy requires a majority interest, management control, and continued operation in the production period of the operation.

Company officials who have followed the situation in Brazil regard the senate amendments as important, not from the standpoint of attracting any significant amount of foreign oil capital, but as a possible indication that more and more Brazilians are beginning to realize that oil development by the government may be undesirable.

Deep Well Testing

Venezuelan test is deepest hole outside United States

WELL LS-1387 of Venezuelan Oil Concessions, Ltd. (Shell) in Western Venezuela, the deepest hole drilled outside the United States, has reached total depth at 17,537 ft. and testing is now under way.

Drilling was halted when the well hit basement. The location is about 12 miles south of Lagunillas.

Creole Petroleum Corp. meanwhile has carried its Alturitas 2, another Western Venezuela Cretaceous test, to a total depth of 17,265 ft. and also is reported testing. This well is located about 3½ miles southeast of Alturitas 1 on the west side of Lake Maracaibo.

Alturitas 1 went to 17,087 ft. about 2½ years ago and previously held the record as the deepest hole drilled in foreign operations. In the United States, the depth record remains in Superior Oil Co.'s 1 Unit in Sublette County, Wyoming, which went to 20,521 ft. in 1949.

Barinas basin interest . . . Considerable interest has been aroused by unverified reports of oil shows in Sinclair Oil & Refining Co.'s Sinco 1 wildcat in the Barinas basin. No official information, however, has been made available on this test, which is located about 4 miles south of the shut-in Barinas production of Socony-Vacuum Oil Co.

The Apure-Barinas basin has been receiving major attention in the geophysical and geological activity in Venezuela. Socony-Vacuum several years ago completed some six productive wells on a concession adjacent to the acreage now being drilled by Sinclair. Reports in the industry were that Socony-Vacuum felt it did not have sufficient acreage in the area to justify further development and the expensive long-distance pipe line required to move commercial production from this remote part of southwestern Venezuela.

Last fall, the Sinclair company announced a stepped-up exploratory program to be carried out in four Venezuela states, including Barinas, in an effort to develop further production. Sinclair's three previous exploratory tests prior to the Barinas operation were dry.

Deep producer reported . . . In La Paz field in Western Venezuela, Shell Car-

ibbean Petroleum Co., Ltd., is reported to have obtained production from fractures in the basement rock. Field well P86 was deepened several hundred feet into the basement rock and on test produced nearly 2,700 bbl. daily of 31.9°-gravity crude through ¾-in. choke.

Deeper Cretaceous production was discovered in La Paz in 1944. The Cretaceous production is found at depths ranging from 4,800 ft. to 11,500 ft. The structure is such that part of the basement rock is above the water table, and as the gas cap expands, production is taken from progressively lower zones in the fractured limestone. P86 is said to be the first to verify production from fractures in the granite rock itself.

Colombian Strike Indicated

A second oil discovery of possible major significance in the mid-Magdalena Valley of Colombia is indicated in preliminary reports on the Aguachica test of International Petroleum Co. (Colombia), Ltd.

The well is located about 18 km., or 11 miles, west of the Totumal area, where International in November 1951 discovered Colombia's first Cretaceous production west of the Barco concession.

Reports in the industry were that following acidization the Aguachica well flowed about 800 bbl. daily from the same Cretaceous limestones as found in Totumal. The well was earlier drilled to about 6,500 ft. and plugged back.

While no official information was available from the company, the reports on the Aguachica operation were regarded as further confirmation of the likelihood of important production through this general area.

MIDDLE EAST

A.I.O.C. Sues in Japan

Tokyo court asked to impound Iranian cargo as stolen property; government action to halt shipments expected

ANGLO-IRANIAN OIL CO., LTD., has asked a court in Tokyo to impound a cargo of Iranian oil on grounds it is stolen property.

The action was directed against the Japanese marketing company, Idemitsu Kosan, whose tanker, the Nissyo Maru, brought a shipment of products from Abadan.

A district court in Tokyo heard arguments in the case and indicated a decision will be handed down May 23. Anglo-Iranian's petition was based on Article 29 of the Japanese constitution which provides protection for property rights.

The Nissyo Maru docked May 9 at Kawasaki, about 10 miles south of Tokyo. The vessel was carrying about 125,000 bbl. of products loaded at Abadan April 13. The exact nature of the shipment was not clear. Original reports were that the cargo comprised gasoline and fuel oil, but there have been indications subsequently that aviation gasoline was included.

Action expected . . . Meanwhile, the Japanese Government appeared to be taking a firm stand against any more such transactions by its citizens. The government was anxious to avoid damaging its relations with Britain. The Japanese Cabinet discussed the matter, and a spokesman said later the issue was of a "very delicate nature."

Dollar allocations given by Japan for the purchase of oil heretofore have not stipulated the country of origin, but the Japanese Ministry of International Trade and Industry was reported to have adopted a policy providing that the future dollar quotas could be used only for oil from Saudi Arabia or the United States.

However, Idemitsu has an unused allocation of $950,000 in the current period not subject to the new restrictions. Sukezo Idemitsu, president of the company, said the Nissyo Maru would leave soon for another Iranian cargo. Whether his government could exert sufficient pressure to block this plan remained to be seen.

Anglo-Iranian's lawsuit was being watched with interest by the companies now marketing petroleum in Japan. The Japanese market is dominated by the international companies which have partnership deals with leading Japanese firms. Cheaply purchased Iranian products could be sold in Japan considerably under current prices, possibly as much as 30 per cent less.

The arguments . . . The court hearing in Tokyo provoked heated arguments from attorneys representing the two companies. E. V. A. de Becker, Anglo-Iranian's attorney told the court that the British company had not been compensated for the properties which the Iranian Government seized, that

Foreign Guests of the Houston Nomads

Visitors attending the May meeting of the Houston chapter of Nomads included, left to right: Pierre de Verteuil, Socony-Vacuum Oil Co., Caracas, Venezuela; J. A. Dahlegren, Jr., Socony-Vacuum, Caracas; A. Gorkovoi, Bataafsche Petroleum Mij., The Hague, the Netherlands; H. W. Lafeber, B.P.M., The Hague; Rene Saint-Amans, FORTEX, Algeria; J. M. Russell, Shell Petroleum Co., London; F. W. Haeseker, Asiatic Petroleum Co., The Hague; R. L. Holden, The Texas Co., Caracas; and J. C. P. Stoltz, Shell Oil Co., The Hague.

the Idemitsu purchase had aroused public opinion in Britain, and that an unfavorable decision would make Japan less attractive for foreign investors.

On the other hand, Idemitsu and his attorneys asserted that a Japanese court had no right to pass judgment on the validity of legislation of another country. They pointed out that the International Court of Justice at the Hague had held the Anglo-Iranian concession to be in the nature of a private contract rather than an international treaty and argued that Britain itself had acknowledged the nationalization of Anglo-Iranian's properties.

Anglo-Iranian's court action against Idemitsu is in line with its announced policy of claiming ownership of any Iranian oil shipped out of the country in the absence of a settlement that includes compensation. The Nissyo Maru's cargo represents the only oil exported from Iran aside from five shipments by two Italian firms. Anglo-Iranian has lost the first round in Italian courts, but is pressing a case in Rome for a further decision.

EUROPE

Joint Firm Formed

Gulf, Montecatini organize company for Italian search

GULF OIL CORP. and the Italian Montecatini Mining & Chemical Co. have formed a joint company to explore in the east-central part of Italy along the Adriatic Sea.

The company is known as Soc. Petrosud. Gulf and Montecatini each have equal interest. Work is scheduled to begin at once in the Abruzzi and Marches region.

The acreage which Gulf has held in this section for several years is in three blocks of about 100,000 hectares each. It was originally taken under the 1927 Mining Law which is the only petroleum legislation under which private capital can operate in Italy outside of Sicily, where a separate oil law is in effect. With its partnership with Montecatini, Gulf becomes the only major foreign operator active in Italy exploration.

Exploratory operations have been gradually extending down the Italian peninsula from the Po Valley region where considerable work has been done since the war by the government-owned Azienda Generale Italiana Petroli. AGIP is now reported drilling a second well in the Ancona area after obtaining gas shows in an earlier test. AGIP has tested several other structures along the east side of Italy, and Montecatini has been drilling a well south of Taranto in southern Italy.

Current operations . . . Soc. Petrolifera Italiana, Standard Oil Co. (N. J.) Italian producing company, is drilling Montecatini's well in southern Italy on a contract basis. S.P.I. also is using one of its lighter rigs to drill a steam well in northern Italy. This company has minor production in Italy but has been inactive in exploration on account of the objectionable features of the present oil law.

In Sicily, a local Italian company, Esvalso, recently obtained gas production at San Guiseppe la Rena in the Catania district under a prospecting license granted by the Sicilian Regional Government. The well was taken to 2,200 ft., and the gas tested 20,000 cu. m., or about 700,000 cu. ft., daily at a pressure of 50 atmospheres. It is said to be the first gas production in Sicily.

American International Fuel & Petroleum Co., a Gulf subsidiary, is rigging up for the first test on its Sicilian acreage. The well will be located on the outskirts of the Ragusa in the southeastern part of the island. A second exploratory well is scheduled to be undertaken later this year on a concession of Mediterranean Oil Co., jointly owned by Gulf and Macmillan Petroleum Corp.

AGIP is reported to have recently negotiated an agreement with the Sicilian Regional Government under which it will carry out extensive work exploration for gas in central and western Sicily. The agreement is said to give AGIP a preferential position similar to that which it now holds in Italy.

Oil Found in Portugal

Exploratory work which has been under way in Portugal for the last 5 years has been encouraged by the discovery of minor production about 25 miles north of Lisbon.

The shallow exploratory hole, Abadia 1, on the Torres Vedras structure, found oil in sandy-marly layers of the Malm at 472 ft. A strong flow of natural gas and 30-40 liters (less than a barrel) of heavy oil showed in testing. Another deeper well is now planned. The operation is being carried out by Cia. Dos Petroleos De Portugal, 51 per cent owned by the Portuguese Government and 49 per cent by the Swedish firm of A. Johnson & Co.

World Briefs

Fuel rationing has been lifted in Denmark. The action applies to fuel oil, coal, and coke and was made possible by increasing stocks of these commodities. Fuel rationing was the last of Denmark's rationing plans.

Sinclair Petroleum Co.'s second test on its Ethiopian concession in East Africa has been suspended at a total depth below 9,000 ft. A small, noncommercial show of oil was obtained in a test before mechanical difficulty was encountered. The rig remains on location while additional surface geological work is being carried out. The second well is near the village of Galadi, about 45 miles east of the Gumburo Hills well which was carried below 10,000 ft. 3 years ago.

Royal Dutch-Shell has ordered an electronic digital computer from the Ferranti company for use in its research laboratories in Amsterdam. The so-called electronic brain with installation and auxiliary equipment costs approximately $280,000. It will be used in calculations required in research in petroleum chemistry and engineering.

Esso Francaise (Standard Oil Co. [N. J.]) has commenced drilling the first test of its concession in southwestern France. The well is Mano 1 at the village of Capsus some approximately 50 miles south of Bordeaux. A French contractor is handling the operation. The well will be the northernmost test to date in the Bordeaux basin.

A number of wells are being drilled by Anglo-Iranian Oil Co., Ltd., to provide a supply of fresh water for its 100,000-bbl. daily refinery now under construction at Aden. Five of the wells are now being completed to tap the water table at a depth of about 230 ft. in an area 10 miles from the refinery site. After the refinery is completed, about 10 pumping water wells and a 12-in. line will be used to provide 2 million gallons daily for domestic use and certain process requirements. Sea water at a rate of 4 million gallons an hour will be used for refinery cooling, and boiler-feed requirements will be supplied by sea-water evaporators.

Panhandle Oil of Canada, Ltd., a subsidiary of Panhandle Producing & Refining Co., now has two geologists making a preliminary reconnaissance survey along the coast in Northwest British Guiana. The company has a nonexclusive permit to carry out work in this area, and if it decides to carry the project further, can obtain an exploratory license under standard British colonial rules.

PERSONALS

New President

D. T. Staples named to top Tide Water position

DAVID T. STAPLES, the new president of Tide Water Associated Oil Co., is a native Canadian who came to this country in 1921.

He was named to head the firm at a recent meeting of the board of directors in New York. He succeeds William F. Humphrey, president since 1933, and a director since the company was organized in 1926. Humphrey has retired from both positions.

Staples also is a director of Tide Water, executive vice president and director of Pacific Western Oil Corp., and director and retiring president of the Oil Producers Agency of California.

He was graduated from law school in British Columbia and admitted to the British Columbia bar before coming to Los Angeles. He served with Shell Oil Co. several years before joining Pacific Western Oil Corp., Los Angeles, in 1929. He is a member of the California bar.

Other positions held by Staples include that of vice president and director of Mission Corp., and Mission Development Co., and director of Pierre Hotel, New York, and Spartan Aircraft Co., Tulsa.

Gordon B. Crary, general partner of E. F. Hutton & Co., Los Angeles, has been elected a new director of Tide Water Associated Oil Co. **Drew L. Hines,** vice president and chairman of the company's eastern operating committee, also was elected a director.

U. B. Boucke, who has been vice president, director, and controller, has retired as director and controller but will remain as vice president. **Fero Williams,** reelected a director, was elected vice president and controller. Directors who have retired include: **H. P. Grimm, Walter A. Haas, Harry C. Hunt,** and **John H. Wents, Jr.** In addition to the directors previously named, eight other directors were reelected to the new 12-man board.

W. A. Bramlette has been appointed assistant chief geologist for Carter Oil Co. He will be replaced as western division geologist at Denver by **James McCullough.** The latter will be succeeded as district geologist at Vernal, Utah, by **Vernon Farmer.**

J. H. Riess has been named chief engineer for The Texas Co.'s West Tulsa refinery. He succeeds **F. D. Dorr,** who has been named assistant superintendent at Texaco's Lawrenceville, Ill., refinery. Riess formerly was test and inspection supervisor at Texaco's Lockport, Ill., refinery.

Dr. Hans Schindler has been named manager of L. Sonneborn Sons' Daugherty refinery at Petrolia, Ont. He succeeds **T. M. Murphy,** who retired recently after 49 years of service. Dr. Schindler has served in several capacities at the refinery, including that of research chemist.

John W. Patterson, junior petroleum engineer for Sinclair Oil & Gas Co., has been transferred from Nowata to Drumright, Okla. **David G. McMunn** and **Charles B. Ammann,** both junior petroleum engineers, have been transferred from Drumright to Oklahoma City.

T. W. Elliott, formerly assistant fields engineer for Iraq Petroleum Co., Ltd., at Kirkuk, has been appointed chief engineer of Basrah Petroleum Co., Ltd. Elliott, a graduate of Glasgow University, joined I.P.C. in June 1946 and previously served as senior civil engineer and assistant chief engineer at Kirkuk. Two other senior appointments made recently by Basrah Petroleum following reorganization within the company were the selection of **Judge Abdul Hafidh el Taha,** formerly senior liaison officer to the company, as manager of a newly created general department, and that of **H. M. Thomson,** formerly assistant fields manager at Kirkuk, as personnel manager.

Philip C. Blackburn, specialist in petroleum training for the Petroleum Extension Service at the University of Texas, Austin, has been appointed director of engineering and field activities for the American Association of Oilwell Drilling Contractors. He will assume his duties with the association in Dallas following a brief vacation.

J. H. BARNETT

J. Howard Barnett, Casper, Wyo., consulting engineer, has been elected chairman of the Rocky Mountain district of the American Petroleum Institute Division of Production. He succeeds **A. F. Barrett,** Socony-Vacuum Oil Co., Billings, Mont. Vice chairmen elected include: **H. C. Scoville,** U. S. Geological Survey, Salt Lake City, for Utah; **T. A. Atkinson,** Socony-Vacuum Oil Co., Casper, Wyo., for Wyoming; **E. N. Dunlap,** The California Co., Denver, for Colorado; **William M. Schul,** Phillips Petroleum Co., Cut Bank, Mont., for Montana; **O. C. Arnold,** Amerada Petroleum Corp., Williston, N. D., for North Dakota; and **J. S. Leonard,** Ohio Oil Co., Sidney, Neb., for Nebraska. **Walter F. Forbes** of Ken Corp., Casper, was chosen secretary-treasurer, and **A. F. Barrett** was named chairman of the advisory committee.

C. H. Lamoreaux has been named assistant general manager of the gasoline and refined-oils department for Standard Oil Co. (Ind.). He formerly was manager of sales for the eastern division.

Herschel L. Driver has been appointed staff geologist for Standard Oil Co. of California at San Francisco. He formerly was the company's staff stratigrapher, covering the Pacific Coast from Los Angeles.

R. M. Wallace has been loaned by Phillips Chemical Co. to the Office of Synthetic Rubber, Reconstruction Finance Corp., to serve as assistant chief of the plant-operations division. He will be located in Washington, D. C. He recently has served as assistant manager of the atomic-energy division of Phillips Petroleum Co.'s research and development department at Idaho Falls, Idaho.

PERSONALS

Underground Storage Problems Discussed

Panel members at a luncheon session on underground storage at the American Gas Association's first transmission and storage conference held in Chicago recently are shown above. Left to right, they are: Charles C. Ingram, Oklahoma Natural Gas Co.; James G. White, Mississippi River Fuel Co.; Mark Burlingame, Natural Gas Storage Co. of Illinois; John W. Goodman, Equitable Gas Co., panel chairman and chairman of the operating section's committee on underground storage; L. R. Kirk, Ohio Fuel Gas Co.; C. W. Studt, Union Gas System; F. H. Finn, New York State Natural Gas Corp.; and John B. Corrin, Jr., Hope Natural Gas Co.

J. Milton Henson has been appointed chief seismologist for Geophysical Prospecting Co., Calgary, Alta., and **George J. Cornford** has been named drilling superintendent.

L. G. Alexander, refinery superintendent for International Refineries, Inc., Wrenshall, Minn., has been named vice president and general manager. He joined International Refineries in 1951 after serving 6 years in Venezuela for Creole Petroleum Corp.

L. D. GRUBB

Loren D. Grubb, assistant superintendent at Continental Oil Co.'s refinery at Ponca City, Okla., has been selected as one of 30 young men in American industry to receive a 1953-54 Sloan Fellowship at Massachusetts Institute of Technology at Cambridge. Grubb, 37, is the second Conoco man to receive a Sloan fellowship. **William F. Brown,** superintendent of the Ponca City refinery's catalytic cracking division, received the award in 1950.

George Holden has opened offices as a petroleum consultant at Baton Rouge, La., to engage in geological, engineering, and economic analyses. He formerly was assistant chief engineer for the Department of Conservation at Baton Rouge. He was a 1940 petroleum-engineering graduate of Louisiana State University.

J. R. Green, formerly superintendent of Skelly Oil Co.'s Eunice gasoline plant No. 1, has been promoted district superintendent for the manufacturing department there.

Don Allen has resigned as district geologist for Westgate-Greenland Oil Co. to become associated with O. G. Bitler and Westgate Oil Co. at Kansas City, Mo. He will have charge of the Oklahoma-Kansas office of Bitler and Westgate at Wichita.

Charles Hinton, superintendent of production and gathering for Panhandle Eastern Pipeline Co. at Liberal, Kans., has been named manager of production for the entire system at Kansas City, Mo. **R. B. Harkins,** who has been assistant superintendent, has been appointed to succeed Hinton.

C. F. Blankenhorn, exploitation engineer for Shell Oil Co. in the Odessa, Tex., southern production division office, has been transferred to Midland, Tex. Other Shell changes in the Midland area include: **H. M. Goodman,** formerly division geologist, promoted to eastern division exploration manager at Midland; **A. Hols,** area reservoir engineer at Midland, named division reservoir engineer at Odessa; **P. S. McClune,** eastern division exploration manager at Midland, appointed area geologist at Midland; **V. W. Rogers,** area geologist at Midland, appointed western division manager there; **J. E. R. Sheeler,** division exploitation engineer at Odessa, promoted to division manager there; and **R. M. Brackbill,** transferred from technical-services division at Houston to Odessa as exploitation engineer.

J. P. D. Hull, business manager for the American Association of Petroleum Geologists for 27 years, has been appointed to the newly created position of managing editor of the association's monthly bulletin. **Elmer W. Ellsworth,** assistant business manager since 1946, has been named business manager.

J. P. D. HULL

E. W. ELLSWORTH

Dr. F. A. L. Holloway, formerly head of the technical division of Esso Standard Oil Co.'s Baton Rouge, La., refinery, has been appointed general superintendent of the refinery.

Howard Bishop Bradley has been named a research engineer for Magnolia Petroleum Co. at Dallas. He formerly was with the U. S. Navy at Norfolk naval shipyard.

Dr. Harold T. Byck has been appointed assistant for production research to the president of Shell Development Co. He will be responsible for liaison between the company's head office in New York and the experimental

PERSONALS

A.A.O.D.C. Panel Discussion Held

These men took part in a panel discussion recently on "The Economic Situation in the Oil Industry and Its Effect on Contracting." The panel was held at a meeting of the Fort Worth-Dallas Chapter of the American Association of Oilwell Drilling Contractors at the Baker Hotel in Dallas. Left to right, are: J. Mark Gardner, vice president, Delta Gulf Drilling Co., Dallas, meeting chairman; J. L. Latimer, president, Magnolia Petroleum Co., Dallas; F. M. Mayer, president, Continental Supply Co., Dallas; H. B. Fuqua, board chairman, Texas Pacific Coal & Oil Co., Fort Worth; William P. Clements, Jr., general manager, Southeastern Drilling Co., Dallas, panel moderator; A. H. Rowan, board chairman, Rowan Drilling Co., Inc., Fort Worth; Eugene McElvaney, senior vice president, First National Bank, Dallas; William T. Payne, president, Big Chief Drilling Co., Oklahoma City; and Lloyd E. Tracy, vice president, Oil Well Supply Co., Dallas.

projects conducted at the exploration and production-research laboratory at Houston. He joined the company as a chemist and went to Houston in 1948.

R. J. Sullivan has resigned as a petroleum engineer for Stanolind Oil & Gas Co. to become a petroleum consultant at Midland.

Lee A. Keeling has joined **C. H. Keplinger** and **J. M. Wanenmacher,** Tulsa petroleum engineers and geologists, as a reservoir engineer. Keeling will specialize in the valuation of water-flood projects. For the past 4 years he has been with Magnolia Petroleum Co.

Bob Dunn, formerly petroleum engineer for Magnolia Petroleum Co. at Salem, Ill., has been appointed a petroleum engineer for Walter Duncan Oil Properties at Mt. Vernon, Ill.

C. L. Perkins has been elected vice president and general manager of El Paso Natural Gas Co. **H. F. Steen** has been elected vice president and general superintendent.

S. K. Clark, Houston, manager of Continental Oil Co.'s royalty department, has been given added duties as manager of the company's foreign department. He will work closely with Hudson's Bay Oil & Gas Co., Ltd., and Conorada Petroleum Corp., Conoco affiliates.

A. S. Childs, formerly shift engineer for Transcontinental Gas Pipe Line Co. at Moore, S. C., has been named shift superintendent for International Refineries, Inc., at Wrenshall, Minn.

H. L. Rudolph has been elected vice president and a director of Dominion Natural Gas Co., Ltd., Buffalo, N. Y. He has been connected with Cities Service Co. subsidiaries since 1936. **D. P. Spencer** has been elected treasurer and **R. M. Robinson** secretary.

DEATHS

William T. Love, 52, president of The Petroleum Engineer, Dallas, died May 10 at his home in Dallas. He formerly was with The Oil and Gas Journal and had been with The Petroleum Engineer since the magazine was founded in 1929.

Bernard B. Jones, 86, who, with his brother, the late Montfort Jones, brought in the discovery well in Cushing field, died in Washington, D. C., May 4.

Harold R. Linhoff, 56, manager of natural-gas operations for Richfield Oil Corp., died recently in San Marino, Calif.

John H. Hershey, 34, vice president of Hershey Oil Co., Wichita; **C. Kenneth Hicken,** vice president of Great Basin Oil & Leasing Co., and **Ron Johns,** oil and mining editor of the Denver Post, were killed in a plane crash May 10 near Moab, Utah.

Jacob B. Price, 57, who had served as district manager for Lone Star Gas Co. at Wichita Falls and Denton, Tex., died recently at Fort Worth.

Robert C. Schmidt, 42, vice president of Carl B. King Drilling Co., Midland, died at Midland May 8.

Ira L. Baxley, 63, an engineer at the Bayway, N. J., refinery of Esso Standard Oil Co. for 25 years, died May 11 in Elizabeth, N. J.

Dr. J. D. Young, 78, formerly an independent operator in Texas and California, died recently at Long Beach, Calif.

Oscar Drain, a retired driller, died May 11 at Tulsa.

Charles H. Winters, 65, one of the discoverers of the Lloydminster heavy-crude field, on the border of Alberta and Saskatchewan, died recently at Edmonton, Alta. He also was manager of C. H. Withers Drilling Contractors. He was engaged in exploration and drilling work in the northern United States before going to Regina, Sask., in 1933.

Edward Schnell, Sr., 76, retired production superintendent for Foster Petroleum Corp., died in Bartlesville, Okla., recently.

John J. Carson, 64, who retired January 1 as manager of the eastern asphalt division of Socony-Vacuum Oil Co., died May 11 at his home in New York.

W. Edgar Spear, 60, chairman of the board of Chiksan Co., died recently at Pasadena, Calif.

the OIL AND GAS JOURNAL

Salutes

THE

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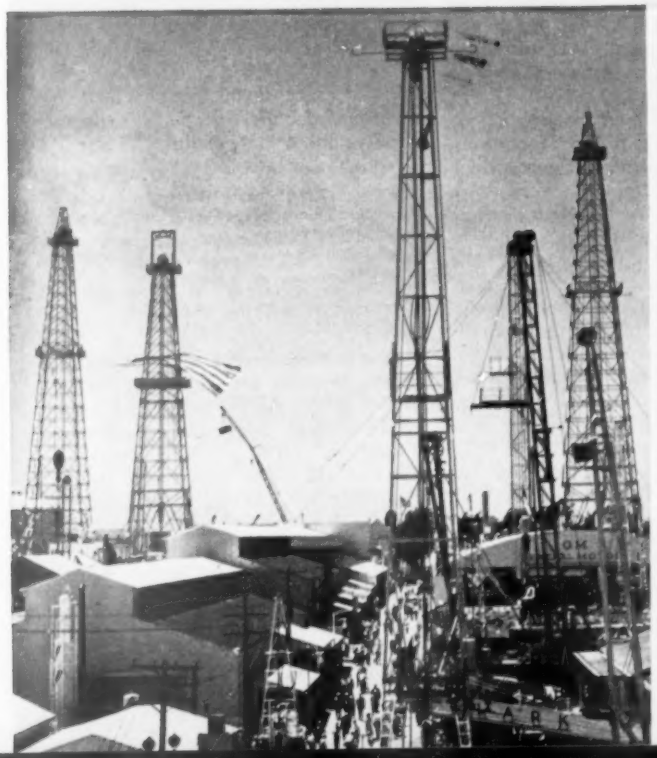
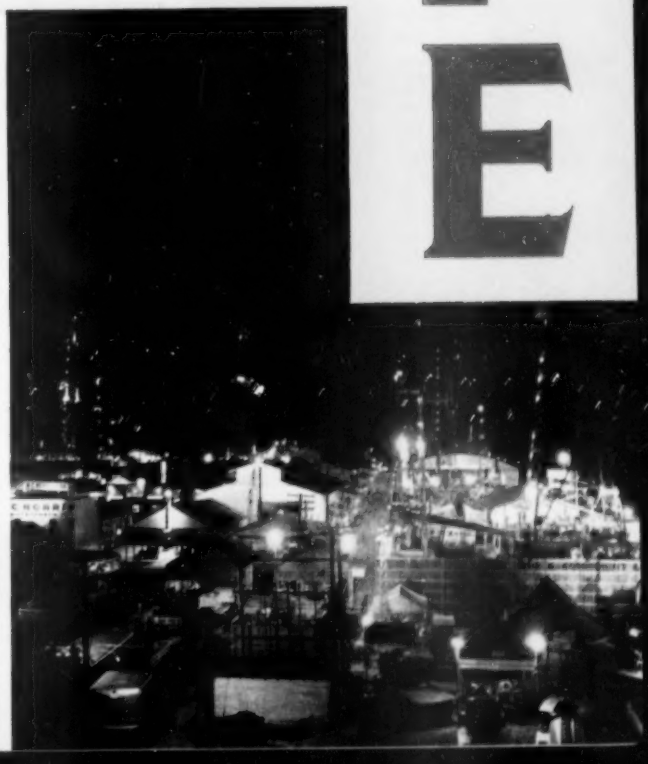
30th Anniversary





Better EQUIPMENT is Better BUSINESS

At the thirtieth anniversary International Petroleum Exposition, Tulsa, May 14-23, 5 years of the greatest advances in petroleum industry equipment and services are dramatically presented—and concentrated for quick review. Here over 1,200 companies are exhibiting—26 acres of exhibits—$100,000,000 value. There are 147 exploration exhibits, 363 drilling exhibits, 390 production exhibits, 363 pipe-line exhibits, 310 refining exhibits.

. . . Whether you are DRILLING

DRILLING contractors, superintendents, engineers, tool pushers, and drilling personnel from the United States, western Canada, Latin America, and the Eastern Hemisphere oil areas, all have their eyes turned on the new rigs and drilling equipment on exhibit at the thirtieth anniversary International Petroleum Exposition this May 14-23. Why?

Why . . . is answered by the fact that in the oil and gas-well drilling business the "standard of the industry" is the finest, most trustworthy, and highest-performance type of equipment. In few other industries or lines of endeavor, if any, is such a premium put on equipment "performance."

Equipment performance counts in oil and gas-well drilling because universally and without exception time and speed are the keynotes. Both cable and rotary rigs operate on the basis of "day work" units; that is, the basic performance factors and costs are measured in units of 24 hours. The day-work rates may be $500, $750, $1,100, or $1,500 per 24 hours, depending on the size of the rig, drilling conditions, etc. Of course these daily figures which the drilling contractors use break down into certain portions for labor, certain portions for depreciation, certain portions for insurance, and so forth. The drilling contracts themselves, of course, usually are executed on a footage basis.

Better drilling equipment can pay off in improved rig performance at a variety of installations — on the derrick floor itself, at the draw works, at the engines, at the slush pumps and mud system, or in the drill string in the hole. In the latter, for example, there are recently introduced improved chert bits, new drill joints, drill-collar stabilizers. Use of long strings of drill collars has by now become common practice in West Texas. For example, 600 to 900 ft. of 6¼ to 6¾-in. collars are run in 8¾-in. holes. The same holds for draw works, pumps, engines, derrick and floor equipment. Improvements in muds are constantly being made, also in the mud-circulating systems. For deep drilling, use of 700-hp. mud pumps is gaining in deep drilling. A certain movement towards automatic drilling controls is under way. Streamlined and unitized rig hookups are now common.

Equipment manufacturers are constantly doing more and more in equipment design, development, field instructional work, and aids for maintenance. Member companies of the Petroleum Equipment Suppliers Association, for example, regularly apply the talents of their engineering and field staffs to the solving of their customers' problems in drilling and workover-rig equipment.

The petroleum manufacturer-supply-service industry regularly maintains a high percentage of regularly trained scientists, engineers, and technicians. A recent survey placed this total at over 9,000. These 9,000 petroleum-equipment manufacturers' employes available to assist the drilling industry divide up as follows:

- 765 research scientists and technologists
- 1,840 development engineers for both product and service
- 445 metallurgists and technicians in metallurgy
- 855 engineers engaged in production inspection and final inspection
- 5,583 field and service engineers.

Size and equipment demands for the drilling business are seen from the following recent figures—there are 1,146 rotary drilling companies which own 3,608 rigs (3,033 of which were running at the time count was made); there were 59,830 employes. Continuing the list, the survey showed 2,397 owners - partners - executives with the drilling companies, 2,875 field superintendents-tool pushers, 45,545 drillers and rig helpers, 9,013 others.

. . or PRODUCING

ONE prominent petroleum research and equipment engineer, Dr. Emory N. Kemler (professor of mechanical engineering, University of Minnesota, formerly with Gulf Oil, University of Pittsburgh, Purdue University, Southwest Research Institute), recently told The Oil and Gas Journal that an over-all approach in the matter of petroleum equipment selection effectively could be outlined as follows:

I. BASIC PROBLEMS IN EQUIPMENT SELECTION:

- **A. Determination of what the job requires.**
- **B. Determination of what the equipment will do.**
- **C. Predicting maintenance problems and costs.**
- **D. Predicting future trends.**
- **E. Tying requirements for performance-maintenance present and the future together through economics, to arrive at final selection.**

Petroleum engineers with the various oil companies have a number of problems in connection with equipment selection, Dr. Kemler told the Journal, which often follow these lines:

II. GENERAL ECONOMIC AND PRACTICAL CONSIDERATIONS IN EQUIPMENT SELECTION:

- **A. Practical (company policies in accounting can influence emphasis on "initial investment vs. maintenance").**
  - **1. Ability to forecast requirements.**
  - **2. Company practices, and maintenance.**
  - **3. Current policies in relation to cash outlays.**
  - **4. Type of equipment available.**
  - **5. Extent of operations in an area.**
  - **6. Labor class and availability.**
- **B. General economic factors.**
  - **1. Nature of investment charges.**
  - **2. Depreciation.**
  - **3. Obsolescence.**
  - **4. Interest.**
  - **5. Taxes.**
- **C. Economic factors in equipment replacement.**

Dr. Kemler said Section I above is intended to indicate the types of problems which are encountered when a rational approach to equipment selection is attempted. These would tend to give in summary form some of the factors which are included in the following sections. For example, Section 1-D is important in predicting obsolescence. Item 1-A is intended to emphasize the need of engineering evaluation and the importance of determining what is required. Item 1-B is intended to cover primarily the mechanical evaluation of the equipment, that is, the problem with which the engineer is faced in putting a load, heat-transfer rate, or other rating on the equipment. Item 1-C obviously is necessary in any economic evaluation to decide between two pieces of equipment of different design and initial cost. Item 1-E would emphasize that the place where economics enter into the picture is when all of these factors are evaluated in terms of dollars, profits, etc.

One of the most difficult problems, Dr. Kemler emphasizes, in applying economics to equipment selection and operation problems, is tied into oil companies' policies. Many of the problems are concerned with or are related to over-all changes in policy as a result of changes in economic conditions. When money is difficult to obtain, emphasis is on reducing initial investment to a minimum. When money is more plentiful, greater attention is given to reducing maintenance expenses.

Also included in Section II-A above is the extent to which labor availability enters into the picture. Section II-B covers the general discussions of economic factors. While they apply in general they must be modified depending on factors outlined in Section II-A. As a corollary to these two sections, II-C is intended to pour out that there are cases where equipment needs to be replaced and the economic factors involved in arriving at decisions concerning some of the common types of problems. Very specific simple examples can be included here, such as the economics of sucker-rod replacement.

In the above outline the material can be broken down into the four major subdivisions of the petroleum industry: Production equipment, drilling equipment, transportation equipment, refining equipment. Under each of these divisions the subheadings are as follows:

- **(a) Evaluation of operating conditions.**
- **(b) Evaluation of equipment requirements.**
- **(c) Equipment evaluation and rating**
- **(d) Future trends to be expected.**
- **(e) Examples in equipment selection.**

In the matter of petroleum-equipment selection, Dr. Kemler points out that equipment selection is not a one-man job but a team job. For example, in determining drilling equipment operating conditions, the opinions of the geological or exploration engineer are needed in regarding such factors as well depths and hole sizes. For drilling in proven areas and for selection of pumping equipment the reservoir engineer would need to furnish information on expected production, type of fluid, and similar information. Perhaps management somewhere along the line would need to estimate what type of production controls, that is, type of proration, might be expected over the life of the well.

Evaluation of the operating conditions would perhaps be a combined effort of the operating personnel and the engineer. The evaluation of equipment requirements based on the above information would be an engineering job. Certainly, the evaluation and rating of equipment is essentially a mechanical design problem.

. . . or REFINING

THE refineries of the efficient operators are spic and span, replete with new equipment and new processes. Good equipment has been proved a "must" for two reasons: (1) The refiner is finding it necessary to utilize more and more of the "bottom-of-the-barrel" fractions, and to crack them to light products; and (2) the whole refining process is dependent on the operation of a number of pieces of "key" equipment.

Experience has proved that most new refining equipment or new processes pay out in 2 or 3 years, or before, with an absolute maximum of 5 years. In recent years one major company has required a 6-month payout on new installations and still found itself busy with new construction of all types.

"Bottom-of-barrel" fractions . . . The general refining situation at the present time is that of soft markets for lubricating oils, fuel oils, and residuums, and refiners are looking for ways and means to utilize these heavy stocks in other ways.

A mounting interest is being shown in the coking of heavy residuals. Coking capacity in this country stands at an all-time high, and an expansion of about 25 per cent is now firmly committed or already under way. Further expansion of coking for the next several years is strongly indicated.

As practiced in modern units, delayed coking produces a clean cat feed stock from any type of crude. New developments in mechanical and hydraulic coke removal and handling have greatly reduced operating costs and brought the conventional coking process to a point closely approaching that of a continuous operation, despite its cyclic nature.

Another method for obtaining some of the heavier fractions in a form that can be used for light products preparation is vacuum flashing. The modern vacuum flashing process provides a method for significantly reducing the refinery's output of heavy fuels. Maintenance of the necessary vacuum and other operating features requires that the very best of equipment be employed.

Still another method for reducing the bottom-of-the-barrel fractions is solvent decarbonizing. The world's largest solvent decarbonizing unit is now under construction handling a charging stock so heavy that it would be uneconomical to process it in any other way. New developments in this modern process require that up-to-date equipment be employed, and that revisions in flow and equipment constantly be made.

Key equipment . . . Throughout the refinery there are a number of pieces of equipment that are essential to the continuing operation of the plant. This equipment must be operating, or the plant operations are hampered or disrupted completely.

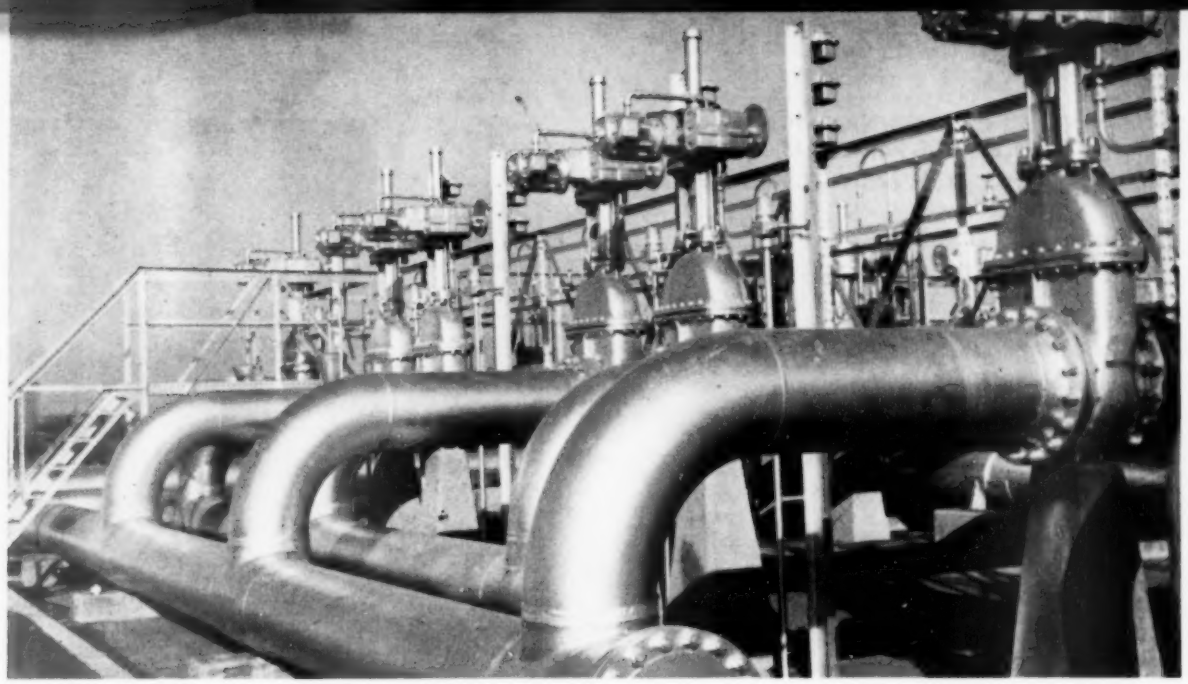
In most cases, key equipment is "spared," so that the spare unit can be brought into operation immediately on breakdown of the primary unit. Even so, both pieces of equipment must be kept in good operating condition. This job is made much easier if good equipment is continually provided by allowing a reasonable obsolescence factor.

It is cheaper in the long run to discard a crude-oil charge pump, for example, than to have it go out at a crucial time. Significant loss in throughput, even for a very short time, can mean enough lost production to pay for a new pump many times over.

Easier maintenance—better safety . . . Maintenance required for good equipment is much less than that required for poor equipment. Fewer inspections are required, and fewer repairs are needed. This means, too, that smaller stocks of replacement parts are necessary.

A modern, efficient plant is conducive to a good safety program. The plant is more easily kept clean, thus enhancing the pride of the operators in their work. Fewer accidents occur, since the equipment operates with fewer breakdowns, and since modern equipment is designed to operate safely.

Better EQUIPMENT



. . . or PIPE LINING

THE low cost of pipe-line transportation vitally contributes to the economic advantage of the petroleum and gas industries. This low cost is achieved by the continued development of better equipment. In the face of rising costs, large-scale pipe-line operations are being conducted economically as the result of improved techniques.

The oil industry lays more than 20,000 miles of pipe lines every year. As to equipment employed, the pipe-line construction equipment required for one large 30-in. spread in hard rock country costs as much as 1½ million dollars. In the United States today there are 979 equipment spreads of all sizes available for operation.

The term "spread" is a pipe-line construction unit of measure—both of equipment and personnel. The number of men employed on one pipe-line spread may run from 200 to 500.

Personnel employed in a pipe line spread is organized as follows: Spread superintendent, right-of-way foreman, ditching foreman, bending foreman, pipe foreman, welding foreman, dope-gang foreman, lower-in foreman, and backfill and cleanup foreman.

On a typical operation the distance between the front and rear of a spread might be from 10 to 15 miles. The time required for the entire spread to pass a given point might typically be 2 weeks. It could take less time than this—or a great deal more, depending on weather, soil, deliveries of material, and other factors.

Big-inch pipe lines have been the outstanding development of recent years for the transportation of crude oil, refined products, and natural gas. With big-inch lines the saving of power and reduction of construction costs per barrel-mile capacity is substantial. As an example, the use of a 24-in. line instead of 12-in. lines with equivalent capacity saves 30 per cent in power, and the larger the diameter the greater the proportional saving of power. New pipe lines in the United States have been built for crude oil as large as 24 and 26-in. in diameter and for products as large as 14 and 18-in. Major natural-gas lines are now being extensively planned for 30-in. diameter and 34-in. diameter has even been used for this service in recent years.

Stations are engineered to utilize advanced pump and compressor equipment suitable for big-inch operations. Motor-operated valves for manifolds have become standard equipment for major lines. Push buttons start and stop motors serving pumps and valves. By the application of remote and automatic controls reliable, efficient, and economical operation is achieved. Improvements in the design of pumps, compressors, engines, and motors are increasing the effectiveness of modern facilities.

Communication techniques are advantageous for flexibility and coordination of operations with the use of wire lines, radio, and microwave. For multichannel communication for voice, telemetering, and supervisory control microwave has proved attractive. Already pump stations are being operated hundreds of miles away from central office console. By V.H.F. communication quick contact is made with trucks and cars of field organizations.

Construction: Contractors' big-inch spreads now represent investments of between $750,000 to twice that amount. Consequently, equipment effectiveness is essential. With all costs considered, the expense of running a big-inch spread frequently costs upward of $10,000 a day. Large-scale output is only possible with ample modern construction equipment.

Two-way radio facilitates rapid changes in construction operations. Steady progress of pipe laying is insured by the wide use of airplanes by contractors.

Maintenance: Modern maintenance calls for a variety of equipment for diverse operations such as airplane patrolling of pipe lines and the application of modern techniques of cathodic protection for corrosion mitigation.

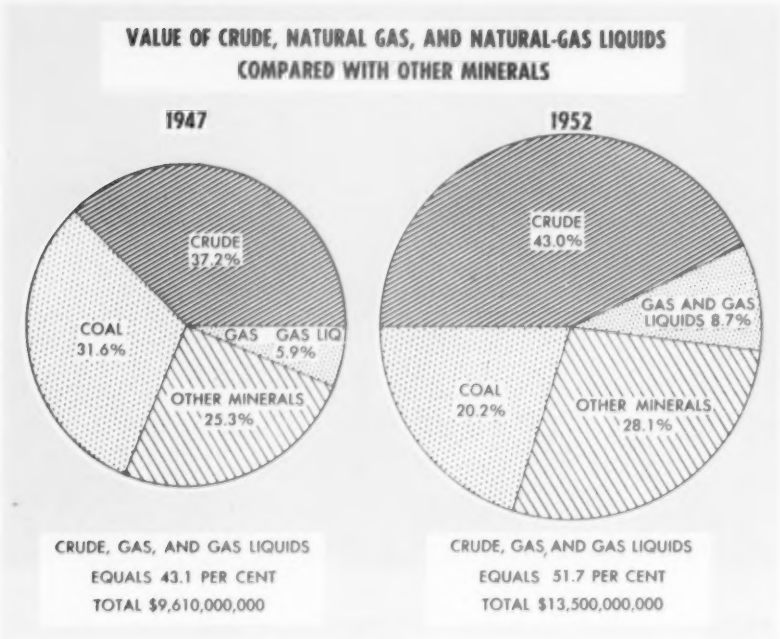

VALUE OF CRUDE, NATURAL GAS, AND NATURAL-GAS LIQUIDS COMPARED WITH OTHER MINERALS
1947
CRUDE 37.2%
COAL 31.6%
GAS
GAS LIQ 5.9%
OTHER MINERALS 25.3%
CRUDE, GAS, AND GAS LIQUIDS EQUALS 43.1 PER CENT TOTAL $9,610,000,000
1952
CRUDE 43.0%
GAS AND GAS LIQUIDS 8.7%
COAL 20.2%
OTHER MINERALS 28.1%
CRUDE, GAS, AND GAS LIQUIDS EQUALS 51.7 PER CENT TOTAL $13,500,000,000

Fig. 1.

". . . the value of crude petroleum, natural gas, and gas liquids produced in 1952 represented better than 50 per cent of the total value of all minerals produced in this country. . . ."

—The Author

Equipment-Conscious Oil Industry Prepares For Continued Expansion on All Fronts

Industry's traditional policy of discarding the old and installing the new for a better job and more profit accounts for the fact that more than half of total increase in plant and equipment expenditures this year will be for oil expansion

by John C. Casper
Economics Editor

ALL industry in the United States plans to spend about $500,000,000 more for new plants and equipment in 1953 than in 1952, and more than half of this gain will be within the oil and gas industry.

A survey by the Journal earlier this year indicated that total domestic capital investments by the petroleum industry this year would be a little more than $4,000,000,000 for a gain of about $380,000,000 over 1952.

The Department of Commerce reported that for 1953, "the expected increase in mining outlays is entirely attributable to oil and gas extraction companies." Also, "in the nonrail transportation group, lowered capital outlays expected by airlines, local transit, and water transportation companies are offset by increases in spending plans by trucking, bus, and oil-pipe-line companies." Concerning investments in processing the department reports, "Among nondurable-goods producers, larger-than-average increases in plant and equipment expenditures are scheduled by petroleum, chemicals, paper, and beverage companies."

These reports indicate a continuation of the growth in the industry that spent more on capital investment in the year 1952 than in the entire 5-year period 1936 through 1940.

Unless one has taken the time to check the records, it probably will come as a surprise to hear that the value of crude petroleum, natural gas, and gas liquids produced in 1952 represented better than 50 per cent of the total value of all minerals produced in this country during the year.

Petroleum value . . . Fig. 1 shows that crude alone accounted for 43 per cent of the value of all mineral production. Gas and gas liquids added another 8.7 per cent for a total of 51.7 per cent of the value of all minerals produced. This includes coal and all metallic ores as well as items like stone, gravel, and clays.

The values placed on crude and gas are the average values at the well and not the products derived from these crude materials. Total value of all minerals in 1952 was estimated by the Bureau of Mines at 13.5 billion dollars. Of this total, crude, gas, and gas liquids represented about 6.97 billion dol-

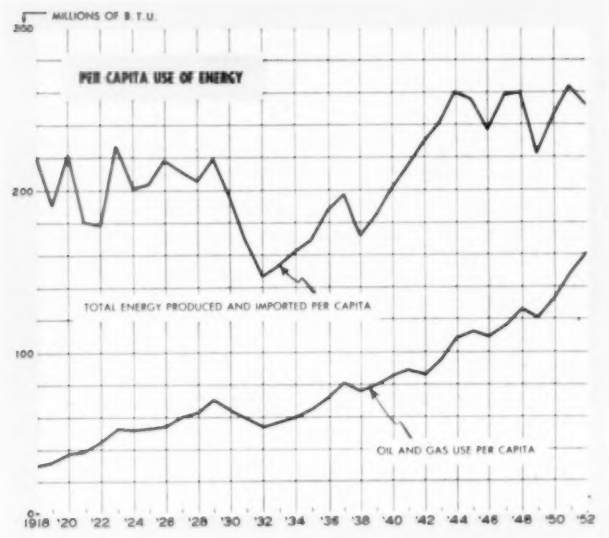

MILLIONS OF B. T. U.
PER CAPITA USE OF ENERGY
TOTAL ENERGY PRODUCED AND IMPORTED PER CAPITA
OIL AND GAS USE PER CAPITA
1918 '20 '22 '24 '26 '28 '30 '32 '34 '36 '38 '40 '42 '44 '46 '48 '50 '52

Fig. 2.

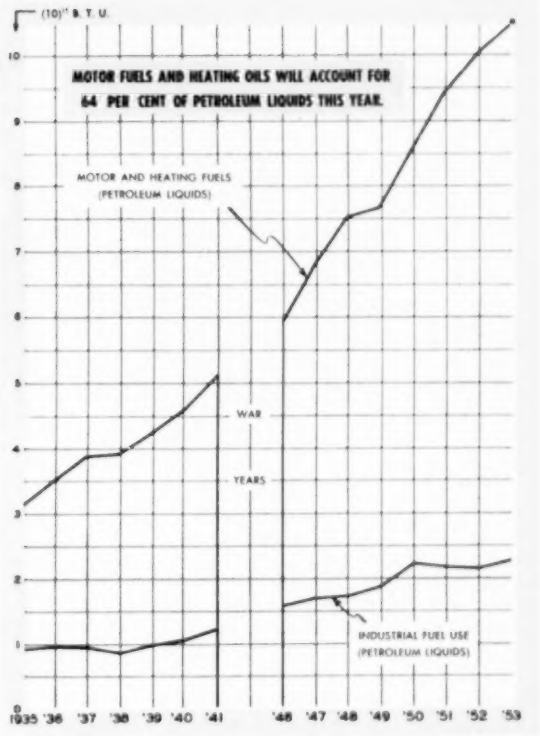

(10)¹² B. T. U.
MOTOR FUELS AND HEATING OILS WILL ACCOUNT FOR 64 PER CENT OF PETROLEUM LIQUIDS THIS YEAR.
MOTOR AND HEATING FUELS (PETROLEUM LIQUIDS)
WAR YEARS
INDUSTRIAL FUEL USE (PETROLEUM LIQUIDS)
1935 '36 '37 '38 '39 '40 '41 '48 '47 '48 '49 '50 '51 '52 '53

Fig. 3.

lars. The value of all coal produced was estimated at 2.73 billion, and all other minerals amounted to 3.8 billion.

Processing volume . . . This comparison gives some idea of the size of the producing side of the industry. However, if one takes a look at the processing throughput, the picture is just as amazing. Last year refiners in this country processed 2,441,259,000 bbl. of crude. In order to make comparisons with other industries, this is converted to weight. Crude runs in 1952 amounted to 370 million tons. If we add to this the volume of field processing, amounting to 221,474,000 bbl., the total is raised to 395 million tons. Total metal processed in this country, including steel, aluminum, lead, zinc, copper, tin, and smaller amounts of other metals, was slightly less than 108 million tons. Petroleum processing volume was more than 3.5 times the total for all metals last year.

Petroleum transportation has been shifting toward industry-controlled pipe lines and away from railroads. In 1935 pipe lines carried 139,000,000 tons of crude and products, and the total had increased to almost 325,000,000 tons for 1951. In the same period the total volume of water carriers increased from 138,000,000 tons to 267,000,000 tons. On the other hand rail movement of crude and products dropped from 57,000,000 tons in 1938 to 50,000,000 tons in 1951.

Pipe-line load . . . Calculations show that for every barrel of refined products consumed in this country, transportation of some kind must be provided for 2.5 bbl. of crude and finished products. Pipe lines are now carrying better than 40 per cent of the total.

Something of the extent of pipe-line transportation of natural gas can be shown by converting gas volumes to weight and comparing the total with other materials. Marketed production of natural gas in 1952 was a little more than 8 trillion cubic feet, and all of it moved by pipe line.

Most of natural gas is methane but if consideration is given to the percentages of ethane and heavier included in average gas, the weight is between 46 and 47 lb. per thousand cubic feet. Using this as a factor, the total weight of last year's gas was about 185 million tons. This compares with 108 million tons of metal refined and processed last year. Total gas transported last year weighed about 4.4 times as much as all wheat grown in this country during the year.

Oil's contribution . . . There has been one fundamental reason for the phenomenal growth of the petroleum industry. It was able to supply energy in a very convenient and usable form at low prices during the period when our expanding economy needed more power per worker to increase the output per man.

Industrial plants in this country are able to compete with production in low-wage countries through use of ever-increasing quantities of energy per worker. A growing economy demands a growing supply of energy.

On Fig. 2 it can be seen that the average use of energy per capita shifts decidedly with economic conditions. There was very little change between 1918 and 1929 except for small annual variations. The steady drop from 1929 through 1932 came in the early years of the depression. Note another dip in the upward climb caused by the "recession" of 1938, and the slight drop in 1949.

Increase in energy use . . . Per capita use of all energy in the postwar years has been almost 25 per cent greater than in the period just before the drop in 1929.

In contrast with the rather irregular trend line showing the use of total energy per capita, the average use of oil and gas per person has had a much smoother and much faster growth.

In 1918, a little less than 14 per cent of the energy used by an average person in this country was supplied

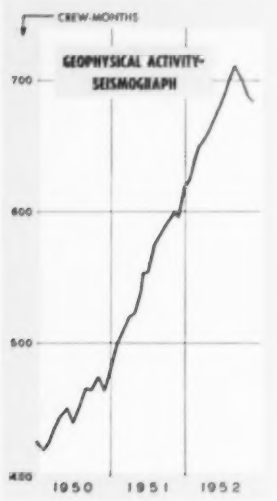


Fig. 4.

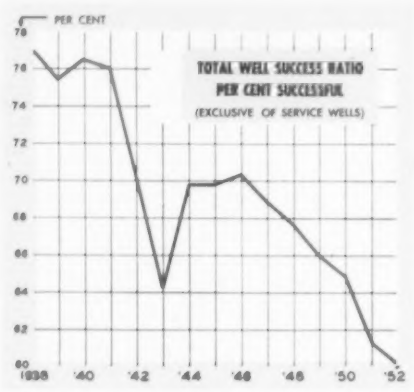


Fig. 5.

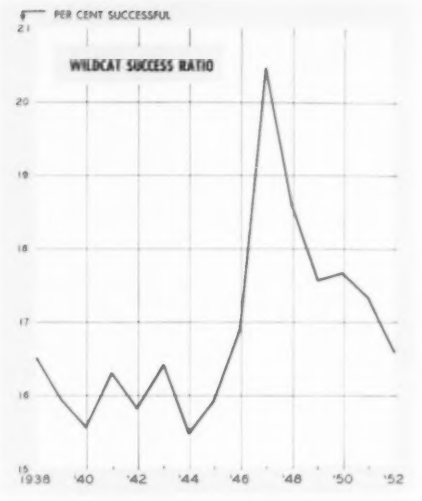


Fig. 6.

by oil or gas. By 1932, the low point in energy use, petroleum and gas had gained enough over other sources to reach 36.6 per cent of the total energy used. The estimated total for 1952 indicates that oil and gas furnished about 63.5 per cent of the energy used by the average person last year.

Thus, in addition to the growth due to normal population increases, and to the greater use of energy per person, oil and gas consumption has replaced other forms of energy, particularly coal.

Oil replaces other fuels . . . Consumption of oil and gas per capita was 5.3 times as much in 1952 as in 1918. On the other hand, total energy per capita increased only 81 per cent in the period between the low year of 1932 and the peak year of 1951. (Total energy use was down slightly in 1952 because strikes reduced industrial consumption.)

In line with this drop in total energy consumption in 1952 and with the more violent fluctuations in the total energy curve, demand for oil and gas has had a more steady growth because consumption has shifted toward those uses less affected by decreases in industrial production.

This trend is particularly true with respect to liquid fuels. If we separate from total domestic demand for petroleum products the volumes consumed for motor fuel and for space heating and make another tabulation of oils used by industrial accounts, we find a trend toward an increasing percentage of petroleum liquids for motor fuel and space heating and a very small growth in use as industrial fuels.

Fig. 3 shows this rapid growth in demand for fuels for motor cars and space heating. It is estimated that about 64 per cent of all oils this year will fall under this classification.

The large increases in demand for petroleum products have been reflected in gains in all divisions of the oil industry.

Exploration

Increases in geophysical exploration in recent years have been, for the most part, confined to seismograph work. Details of this work by E. A. Eckhardt of Gulf Oil Corp. indicate a very rapid increase in the number of crew-months devoted to seismic exploration over the past 3 years. The almost steady expansion with very little seasonal change moved the total from 417 crews in early 1950 to a total of 710 in the late months of 1952.

There has been a general trend toward higher percentages of wildcat completions over the past decade. More and more wells are being located on geophysical information. If the high wildcat-to-total ratio continues, a very high level of geophysical activity will have to be maintained to develop the information on probable new areas.

The 3-year growth in seismograph work is shown in Fig. 4.

Wildcat influence . . . The higher ratio of wildcat completions compared with total wells is influencing the success ratio of total completions.

Fig. 5 shows the declining percentage of successful wells. From 1938 through 1941, about 76 per cent of all wells found either oil or gas. This ratio declined rapidly during the early war years when much of the steel allocated for drilling went into wildcats. Starting again with 1947, the success ratio has continued the sharp decline. Only about 60 per cent of all wells found oil or gas in 1952.

The wildcat success ratio is much lower than the development wells. Successful wildcats represented about 16 per cent of the total in the years from 1938 through 1944. Selective drilling in the late war years and immediately following the war raised the ratio, but it dropped back with the rapid increase in wildcatting. However, success ratio is still higher than in the years before the war. Wildcat success ratios are shown on Fig. 6.

More wildcats . . . Except for abnormal years at the first of the last war, the wildcat percentage of total wells has gained steadily since the late thirties. (See Fig. 7.) This larger relative increase in wildcat drilling has contributed to the smaller percentage of total successes.

Drilling

We have noted the shift toward a higher percentage of wildcat wells, but the big question for oil and equipment men will be: How many wells must be drilled to provide the oil and gas to meet increased demands over the next few years?

The need for drilling is determined by increases in demand and the extra reserves required to back up increased production.

Reserves vs. production . . . The ratio of reserves at the end of the year to production during the year has been (ratios for total liquid hydrocarbons):

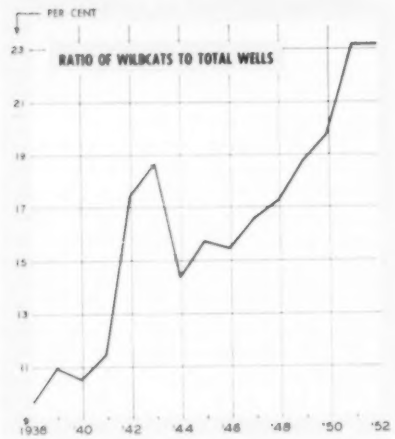


Fig. 7.

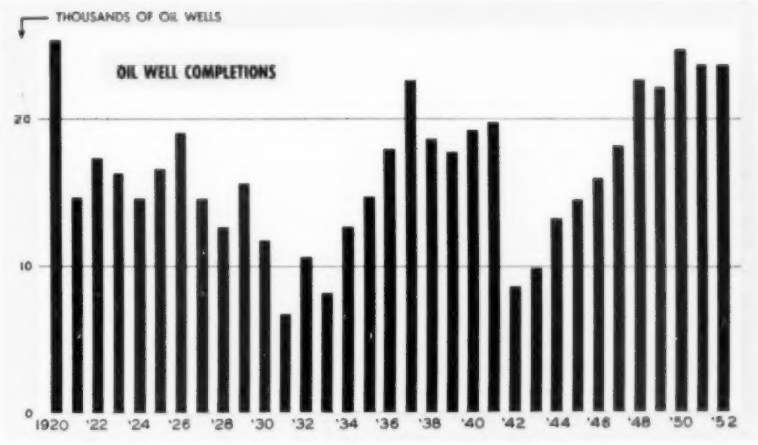


Fig. 8.

1947	12.30
1948	12.26
1949	14.07
1950	13.60
1951	12.97
1952	12.96

These figures indicate that the normal ratio has been about 13. To maintain this ratio, it will mean that operators will have to find enough crude each year to replace the liquids produced plus additional oil in those years of production increases so that the reserves at the end of the year will still be 13 times production during the year.

If we take a conservative estimate of increases in demand, say 4 per cent a year, and if we assume that domestic production will supply the same percentage of total demand, the trend in liquid production will be as follows:

(These figures are gross total liquids and include recoverable liquids in flared and pipe-line gas):

	Bbl. per year
1953	2,643,000,000
1954	2,750,000,000
1955	2,860,000,000
1956	2,975,000,000
1957	3,095,000,000
Five years	14,323,000,000

Production trend . . . These are trends in total production, not forecasts for the particular years in question. For example, production in 1953 is not expected to be as high as shown in the table, but gross production in the later years can well be greater than the amounts indicated for those years.

If the ratio of reserves to production remains at 13, total liquid reserves at the end of 1957 would be about 40,250,000,000 bbl. Since reserves at the end of 1952 were 32,957,000,000 bbl., operators will need to find 7,293,000,000 bbl. of oil to preserve the historical ratio in addition to the 14,323,000,000 bbl. of produced liquids that must be replaced. This means that in the 5 years ending 1957, new oil discoveries or revisions for older fields should be 21,616,000,000 bbl. in order to keep the ratio of reserves to production that existed between 1947 and 1952.

These additions to reserves tend to maintain the historical ratios, and if still greater reserve producing capacity is to be established, more oil will have to be found than indicated.

If operators expect to add another 500,000 bbl. daily to the reserve producing capacity, this would mean an addition of about 180,000,000 bbl. on an annual basis. It is estimated that about 80,000,000 bbl. of this capacity can be added under the old ratio of reserves to production, leaving 100,000,000 bbl. for which additional reserves must be found.

The reserves calculated on this new basis would be about 41,600,000,000 bbl. at the end of 1957 for an increase over 1952 of 8,600,000,000 bbl. This new gain in reserves plus production in the 5-year period will call for a total of 22,900,000,000 bbl. of new oil for the 1953-57 period.

Discoveries vs. drilling . . . For the years 1947 through 1952 the following data will indicate the relationship between drilling and oil found:

	New oil—discoveries and revisions (bbl.)	Wells drilled	Thousands of wells per billion bbl. of new oil
1947	2,716,108,000	33,122	12.2
1948	4,265,764,000	39,778	9.3
1949	3,574,621,000	39,038	10.9
1950	3,328,747,000	43,779	13.0
1951	5,137,945,000	44,516	8.7
1952	3,306,126,000	45,821	13.9
Total six years	22,329,311,000	245,554	11.0

These records of the past 6 years indicate that it takes about 11,000 wells to develop a billion barrels of new oil, either through new discoveries or through revisions resulting from further development and information on older fields.

Required drilling . . . If the need for new oil, to replace that produced, to increase the reserve producing capacity, or to maintain the historical ratio of reserves to production amounts to 22,900,000,000 bbl., past records indicate that it will take about 252,000 wells over the next 5 years.

This is an average of about 50,400 a year, but the range for the period may extend from fewer than 47,000 in 1953 to near 55,000 by 1957.

The ratio of successful wells to total completions, shown on Fig. 5, indicates that operators are having to drill more holes for each thousand oil wells than in the past. Total completions in recent years have been far above totals in the early 20's and the middle 30's. On the other hand, it was not until 1950 that total oil-well completions passed the record established back in 1920. Fig. 8 shows total oil-well completion since 1920.

In addition to having to drill more wells to get a thousand oil wells, operators are drilling much deeper. Fig. 9 pictures the increase in average depth

of wells drilled since 1938. Records were not kept on total footage drilled in the early years.

Cost factors . . . The shift toward a higher percentage of wildcats, the decreasing ratio of successful wells to total completions, and the trend toward deeper drilling all add to the expense of finding oil, in addition to the increases caused by higher prices for labor and materials.

The changes in cost brought about by higher material prices and higher wages can be adjusted to the changing value of the wholesale dollar, but additional costs due to changes in type and depth of drilling plus shifts in success ratios are not covered by adjustments based on constant dollars.

The present price of crude is above the average for the period 1924-1952 if all prices are expressed in constant dollars. Expressed in average wholesale dollars for the period 1947-49, the arithmetic average of all years 1924-1952 was about $2.07 (1947-49 dollars). The average for 1952 on the same basis was $2.27. (Prices on a constant-dollar basis are shown in Fig. 10.)

Need for cost data . . . The chart on prices is shown because it indicates that operators must present the story of over-all changes in cost of replacing crude and not just higher costs of wages and materials.

Based on the report by the Petroleum Administration for Defense called "Gas Requirements and Supplies of the Gas Utility Transmission and Distribution Industry," it is estimated that gas available and sold for space heating in 1955 will have increased about 63 per cent over 1951. Sales in 1955 are expected to be double sales in 1950. Gas use for other residential purposes such as cooking and lighting and water heating is forecast at an increase of 26 per cent over 1951.

Gas that will be used for commerce and industry is expected to gain about 43 per cent for the 1951-1955 period. On an over-all basis, gas sales in 1955 will be 45 per cent greater than in 1951 and 66 per cent greater than in 1950. (See Fig. 11.)

Gas increases . . . If this increase in gas consumption is expressed in terms of crude equivalent, the net gain will represent an increase equal to 1,300,000 bbl. daily. This is about the same as total consumption of distillate fuels in 1952, including heating distillates, diesel fuels, and other distillates. (This is increase, not total.)

Projections for use of gas by commerce and industry in 1955 show a gain of 60 per cent over 1950 compared with an estimated increase of less than 5 per cent in industrial use of petroleum fuels. This would seem to indicate that over the next few years, industrial use of natural gas will continue to take the lion's share of total industrial-market increase in this country.

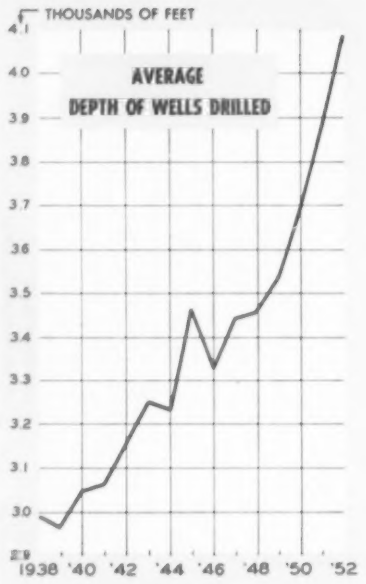


Fig. 9.

Over a longer period of time, use of gas as industrial fuel has had the greatest gain of all fuels. Industrial consumption of gas in 1955 is expected to represent an increase of about 450 per cent over the use in 1935. For the same period, industrial use of oils is expected to gain about 150 per cent. On the other hand, coal, bituminous and anthracite will probably be limited to an increase of about 50 per cent.

Limiting conditions . . . On an energy basis, the use of natural gas over the next few years may increase more than any other major type of fuel. There are several factors that will act to slow down the growth of natural gas.

1. Increasingly smaller blocks of natural-gas reserves that are not undedicated and are available for pipe line use will in the end tend to lower the annual increases in volumes available for movement to high-demand areas.

2. As these blocks become smaller, the cost of gathering and processing the gas for pipe-line movement will increase. While presently the field cost of gas is in some cases less than a third of the wholesale delivered cost on the East Coast, a gradual rise in well-head prices of gas will in the end raise the delivered price enough to make it necessary to consider the effect on the quality advantage enjoyed by gas.

3. On the marketing end of the extensive natural-gas system, some of the more profitable outlets for natural gas have been covered in the earlier expansions following the war.

Growth stimulants . . . On the other hand, there are also several factors that tend to offset the limiting forces listed above.

1. At the present there are several large oil companies with undedicated gas reserves that are being held either for more equitable prices or because in the recent past there has been some indication that the Federal Power Commission had been leaning toward expanding its control to include other operations of a company selling gas for movement in interstate commerce. Some of this material will become available for pipe-line transmission as soon as prices justify the sale or as soon as the companies are assured that the federal

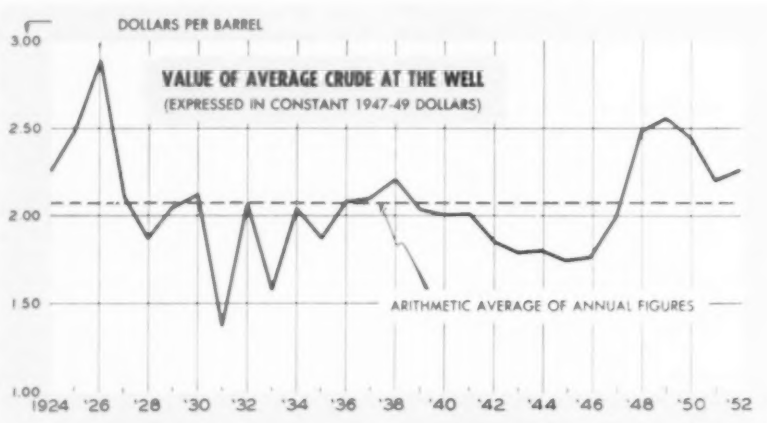

DOLLARS PER BARREL
VALUE OF AVERAGE CRUDE AT THE WELL
(EXPRESSED IN CONSTANT 1947-49 DOLLARS)
3.00
2.50
2.00
1.50
1.00
ARITHMETIC AVERAGE OF ANNUAL FIGURES
1924 '26 '28 '30 '32 '34 '36 '38 '40 '42 '44 '46 '48 '50 '52

Fig. 10.

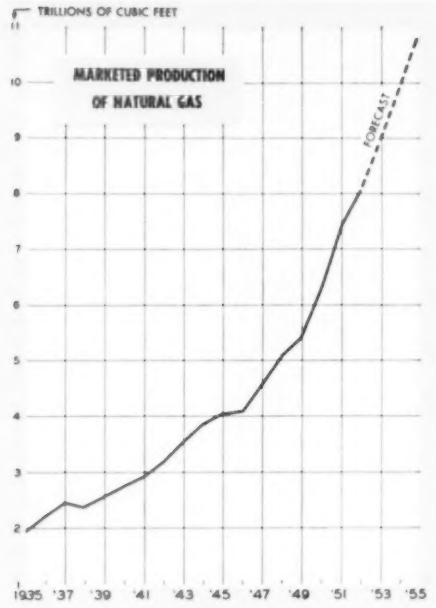


Fig. 11.

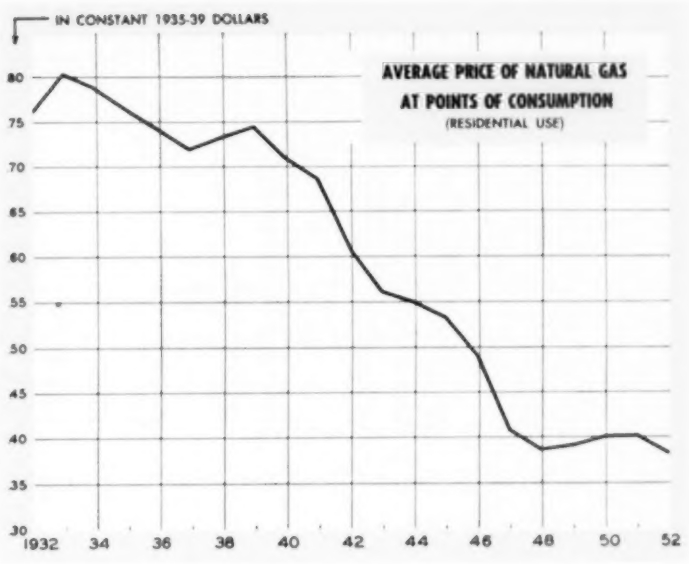

IN CONSTANT 1935-39 DOLLARS
AVERAGE PRICE OF NATURAL GAS
AT POINTS OF CONSUMPTION
(RESIDENTIAL USE)
1932 34 36 38 40 42 44 46 48 50 52

Fig. 12.

Government will not try to run the entire business of those who sell gas that moves in interstate commerce.

2. Higher well-head prices for natural gas will tend to promote the further search for gas in probable areas. In the past, most of our gas reserves have been found by men who were looking for oil. If the well-head price for natural gas should increase to 25 cents a thousand, even our oil reserves would be boosted by the crude found by the great number of wildcatters out looking for natural gas.

3. It is estimated that in 1952 almost 73 per cent of the natural gas marketed in this country went to industrial accounts where the average price at point of consumption was estimated to be less than 16 cents per M.c.f. compared with an average of more than 80 cents for sales to residential consumers and about 55 cents to commercial accounts.

The gas industry is moving toward larger percentages of total marketed production in those classifications that pay more for the fuel, but there is still room for a continuing trend toward domestic and commercial use over a long period of time.

This shift is made possible by the program of developing additional underground storage near points of consumption. This storage will make it possible to set aside, during the summer months, some of the gas that would be sold at low rates to industrial accounts for boiler fuel in order to keep pipe lines near capacity.

4. The fact that natural gas has been made available at some points in the East has tended to increase the clamor for natural by other cities in the area. This high potential demand is the basis for the large increase in natural gas consumption forecast by PAD.

5. Natural gas, a premium fuel, has been held at prices below the level that would have been reached in a completely free economy. Fig. 12 shows the average price of natural gas for all areas in the United States for residential use in constant-value dollars. If we use the value of the consumer dollar in the period 1935-39 as the base, the average price of natural gas for residential use in 1932 was more than 77 cents per M.c.f. and had dropped to 38 cents in 1952.

Field Processing

The rapid growth in the use of natural gas, particularly since the end of the war, has been one of the factors in the expansion of field processing capacity. The other major reason has been the increased demand for L.P.G.

Fig. 13 shows a relative comparison of output at plants and gross natural-gas production. Note that since the end of the war, more particularly since 1947, the relative increases in production of natural-gas liquids have been larger than the gains for natural gas.

Since the production of liquids is directly associated with gas production, the relatively larger increases in liquid production indicated that more of the liquids have been separated from the gas in recent years.

More gas, more plants . . . If natural-gas consumption in 1955 is to be 45 per cent greater than in 1951, more field processing plants will have to be built to extract liquids from the gas. Plant capacity for 1951 was about 790,000 bbl. daily. If plant capacity moves up 45 per cent by 1955 to process all of the gas for the lines, the output capacity for that year would be about 1,150,000 bbl. daily.

The growth in plant capacity from 1925 through 1952 is plotted on Fig. 14.

Refining

Increases in refining capacity will have to follow the demand curve unless product imports increase at a faster relative rate than demand.

If demand gains 4 per cent a year, refining capacity will have to move up at about the same rate.

Active refining capacity for 1953 is near 8,100,000 bbl. daily. This is a Journal figure on a stream-day basis and includes the capacity that will be added by midyear.

Refining gains . . . With this as a base, the capacity expected over the next 4 years can be estimated on a basis of projected gains in demand.

	Capacity, bbl. daily
1953	8,100,000
1954	8,424,000
1955	8,760,000
1956	9,110,000
1957	9,475,000
Four-year increase	1,375,000

(See Fig. 15.)

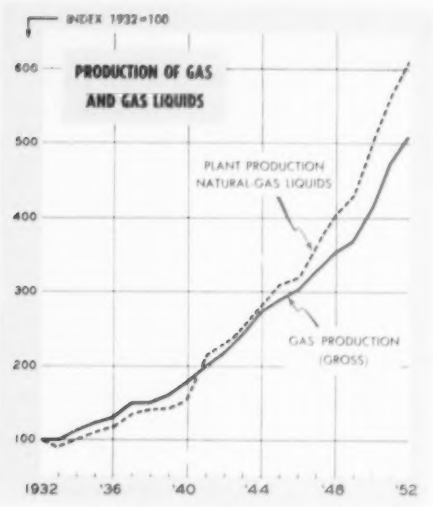


Fig. 13.

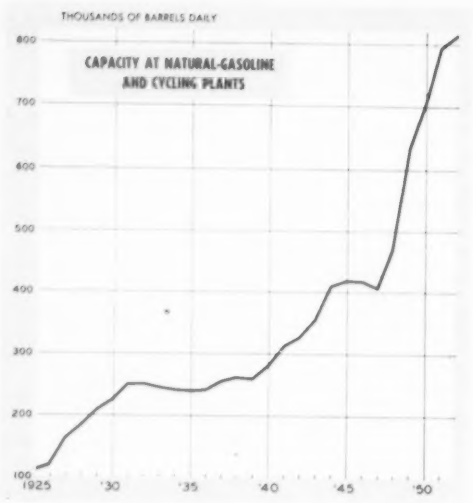


Fig. 14.

Not counting gains for 1953, normal growth over the next 4 years should raise refining capacity from 8,100,000 bbl. daily to 9,475,000 bbl. daily, or a total increase of about 1,375,000 bbl. daily. This would be 345,000 bbl. daily per year.

Replaced capacity . . . Over a period of the past 15 years, the retired capacity per year has averaged 3.5 per cent of capacity for the year. Since the average capacity over the next 4 years is expected to be about 8,940,000 bbl. daily, the average capacity retired per year should be about 310,000 bbl. daily.

Thus, the 345,000-bbl. daily net increase per year needed to meet increases in demand plus the 310,000 bbl. daily to replace retired capacity points to an average over-all refinery construction program of about 655,000 bbl. daily per year for the next 4 years. For the 4-year period, this program will call for construction equal to slightly more than half the total operating refining capacity at the beginning of 1946.

In addition to the straight expansions in refining capacity, there will be important changes in processing that will call for additional construction.

Equipment for processing . . . Postwar trends in use of catalytic cracking and catalytic reforming indicate that these two processes have started at opposite ends of the refinery list, based on size, but are rapidly working toward each other.

Cat cracking was first used at larger refineries. The units installed during the war, for the most part, were used to boost production of aviation gasoline at some of the big refineries. At the end of the war, some people thought that there would be an excess of cat cracking capacity, but the public acceptance and even demand for better automotive gasoline started a construction program that resulted in cat units in all of the important refineries.

Demand for cat cracking by smaller refineries brought units to the medium-sized refineries and later even to what would be classified as small plants.

On the other hand, catalytic reforming started as an aid to small plants in meeting quality requirements for motor fuel.

More octanes . . . The trend in automotive design over the past few years seems to indicate that cars of the future will demand higher-octane fuels. Compression ratios are being moved up with only a part of the increase in octane requirement taken care of by improvement in engine design.

If the customer wants higher-octane gasoline, the only thing that will keep him from getting it will be war demands that overload refineries.

Further improvement in motor fuel will mean a continuation of the program of adding more and newer processing units at refineries.

Current industry problems have been purposely omitted from the discussion of the general outlook since it is necessary to examine these problems in their relationship to each other.

World markets . . . Currently there is an excess of world-wide producing capacity even without Iran. The new discovery in the Neutral Zone between Kuwait and Saudi Arabia has added another producing country in the Middle East.

Production has been reduced in Venezuela because of the immediate market outlook.

The allowable in Texas for the first week of April was 500,000 bbl. daily less than for the last week of November.

Total well completions are about 200 wells fewer than last year.

There hasn't been a general crude-price increase since the end of 1947.

Despite all of these symptoms, the current indisposition of the oil industry is more like a case of colic than an incurable disease.

Today's problems . . . There are several reasons for the present market weakness and in most cases the cures can be taken from the economic experiences of the oil industry.

1 Oil men must make plans to vary the supply of petroleum products to meet pronounced short-term changes in demand. Over the past 15 years and particularly since the end of the war, more and more of our total demand has been under the classification of fuel for space heating. While this provides a very stable demand over a period of time, it does permit changes in the weather to influence product use for a given winter.

Last winter we had mild weather, something like 8 per cent warmer than the year before in those areas of high heating-oil demand. It has been estimated that a normal winter would have added an extra 35,000,000 bbl. to heating-oil demands. The addition or loss of 35,000,000 bbl., even if spread over a year, means a variation from normal of almost 100,000 bbl. daily. A change of 100,000 bbl. daily would represent almost 1.5 per cent of total production in 1952. The oil industry must be prepared to absorb these changes in demand without dumping excess products on the market.

2 Oil operators in this country probably have had more experience in product oversupply than any other industrial group. However, in recent years production has been prorated by state agencies and held within certain limits that are based on demand for products.

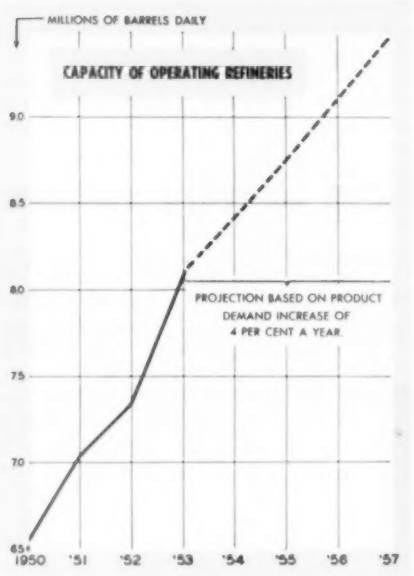


Fig. 15.

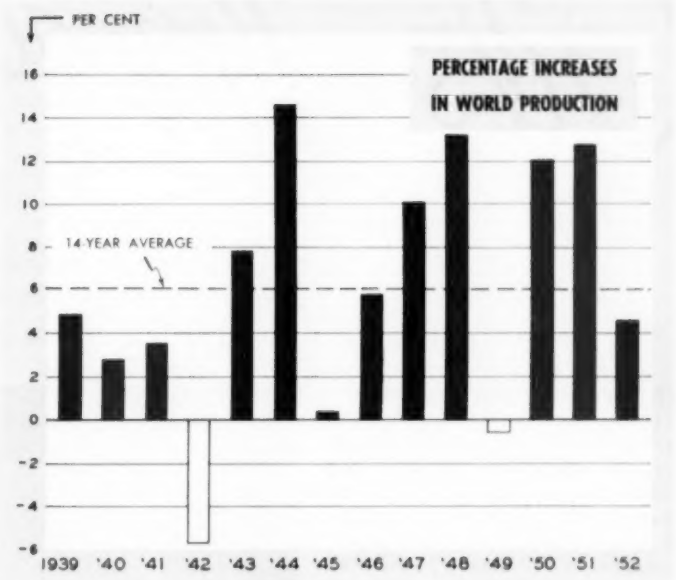


Fig. 16.

3 The solution of the problem of world-wide overproduction can take either of two routes.

. . . Total world production can be adjusted to meet world demands through proration within the major producing countries. Under such a plan more of the shock from sharp shifts in demand would be absorbed by major producing countries in South America and the Middle East.

. . . Some form of federal regulation of oil imports will have to be provided to give at least limited protection to the oil industry within the United States unless producers outside this country limit the increases in foreign production to gains in foreign demand.

Since foreign countries are supplying an increasingly larger portion of world demand, these countries will have to accept more of the responsibility for overproduction as well as underproduction. If the problem is not solved by proration, the foreign market will reach a degree of stability after a scramble for business in the demand areas outside this country.

4 Some of the pressure will be removed if companies with extensive producing properties in foreign countries can convince the controlling government officials of those countries that flooded markets mean less income.

5 Actual world oversupply may not be as large as it seems. We tend to think of oversupply or reserve capacity in terms of volume rather than as a per cent of the current total. Petroleum demand has increased so rapidly in the past decade that we may fail to realize that a change of 1 per cent represents a much larger volume than it did only a few years ago.

Over the past 14 years, world production has increased on an average of 6 per cent a year. PAD recently estimated that demand in this country would be up 5.6 per cent in 1953 and that foreign demand would gain 6.8 per cent. The weighted total will average out a little less than 6 per cent. Even a gain of 5 per cent, based on last year's production of 12,300,000 bbl. daily, means an increase of 615,000 bbl. daily. This is a little less than crude production in Louisiana or production in Iran before the shutdown.

6 The demands of a varying market make it necessary to have reserve producing capacity. Also, under the present world conditions it is necessary for this country to have some excess capacity as a defense measure. These extra capacities are adding to over-all product costs, and in some cases these additional costs cannot be recovered until product markets are stabilized.

The needed increases in crude prices will have to wait at least until adjustments in product supply have been made to correct the condition left by the warm weather last winter.

7 Exploration and development drilling will continue even at the present price-cost ratio. Expenditures for drilling and production are justified by either of two main incentives: (a) The possibility of a quick profit on the investment, or (b) a recognition that future operations of a company may depend on the development of crude reserves each year.

8 Competition is forcing more intensive processing of crude each year. Thus, the increases in processing equipment will be greater than just the gain in throughput.

9 All long-term forecasts of petroleum demand in this country have followed somewhat the same pattern. They call for steady increases for a varying number of years followed by a leveling off to a near-flat curve. Later forecasts have used the same curve moved up a few years.

Since this curve indicates a normal demand trend, petroleum consumption may follow it at some future date, but there is nothing to indicate a leveling off over the next few years. Increases may be smaller than in 1950 and 1951, but still in line with the long-term average for percentage gains.

10 One of the most important factors in the growth of the oil industry in this country has been the willingness of oil men to discard obsolete equipment or processes in favor of tools that could do a better and more profitable job.

Researchers in the industry itself and in the service branches of the industry will continue to find better and more profitable ways to do the job of providing the public with oil products.

Oil's Impact

on the nation's economy

"The impact of the oil industry on our economy will be even greater in years to come. It has the kind of faith in our future that assures continuous progress and achievement."

THE petroleum industry's investments in petroleum facilities in the United States are now 43 billion dollars, which places the industry in third place. The amount of money invested in the natural-gas industry is now around 9 billion dollars. (Agriculture leads with investments of 170 billion, public utilities are second with 52 billion; railroads have dropped to fourth place with estimated assets of 36 billion.)

United States wells produce over half the world's oil, and we are the largest users of petroleum products both in total volume and per capita. The 1952 domestic demand for all petroleum products was 2,665,000,000 bbl. Our population January 1, 1953, was 158,500,000 so that the per capita consumption was 707 gal. per year. The industry's methods of finding, producing, transporting, refining, and marketing are highly developed and are being constantly improved by research.

Another highly important segment of the oil industry is the petrochemical industry which, starting only 30 years ago, now represents a total plant investment of 2.5 billion dollars with probable expansion of $400,000,000 in 1953. Over 17 billion pounds of petrochemicals per year are being produced at present and within less than 10 years, it is anticipated that production will be 64 billion pounds or 50 per cent of the total chemical production in the United States.

At present nearly 20,000 highly trained research personnel are engaged in developing new processes and products and the industry's annual research budget totals over $130,000,000.

Expansion in Petroleum

Through the years the oil industry has been marked by rapid expansion. Since 1946, the industry has spent over 20 billion dollars for facilities to satisfy the unprecedented requirements for its products.

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by Gustav Egloff*

It may be asked whether this great expansion and increasing dependence on petroleum derived products is built on a solid foundation of adequate raw material reserves. Despite periodic gloomy predictions as to its reserve supplies of oil, the known reserves have been maintained in the face of ever-increasing demands. Estimates of ultimate world reserves of 1,500 billion barrels and United States reserves of 120 billion barrels have been made, but these are probably far too low. Evidence is being found that petroleum is still being formed in marine sediments and it may be that its rate of formation is higher than consumption.

Oil and Our Total Energy

The development of our vast oil and gas resources has revolutionized our energy sources within 50 years' time. During the period from 1900 to the present when our population has increased from 76 million to over 158 million, our total power requirements have actually quadrupled. The power derived from oil, however, has increased 38 times and that from natural gas 28 times while that from coal has only doubled. Table 1 contains data on the power developed from coal, oil, natural gas, and water power in 1900 and 1950 on an absolute and a percentage basis.

The data show that the most pronounced increases have come from oil and natural gas which now account for 54 per cent of the power developed, compared to only 41.3 per cent from coal. The curves of oil and gas usage are still rising steeply.

Transportation

The most far-reaching effect of the use of petroleum fuels has been in the field of transportation which has completely altered every aspect of life from international relations to the school boy's Saturday-night date. In 1900, 8,000 automobiles were registered, all passenger cars. The first airplane flight was yet to be made. Today the roads are crowded with 44 million passenger cars and 9 million trucks and buses, and registered civil aircraft number 90,000 in the United States to say nothing of warplanes.

The high gasoline demand has been met both by increasing crude-oil pro-

TABLE 1—UNITED STATES POWER SOURCES

Source—	1900 Trillions of B.t.u.'s	1900 Per cent of total	1950 Trillions of B.t.u.'s	1950 Per cent of total	Times increase over 1900
Coal	7.02	88.9	14.65	41.3	2.1
Oil	0.33	4.5	12.44	35.1	38.0
Natural gas	0.24	3.2	6.75	19.0	28.0
Water power	0.24	3.2	1.57	4.4	6.5

*Universal Oil Products Co.

duction and by new processes for increasing the yield of gasoline. In 1910, with 500,000 autos on the highways, total crude-oil production was about 210,000,000 bbl. compared to over 2 billion at present. At that time, the total gasoline yield was only 12 per cent. Through the use of cracking and related processes the total gasoline yield has been raised to over 45 per cent.

Catalytic cracking, which came into wide-scale commercial development only at the beginning of World War II, produces gasoline with 88 to 90 research octane and as high yields as thermal cracking. Even with these processes, refiners would find it difficult to fulfill the demand for high octane fuels if it were not for recent installations of another type of process called catalytic reforming in which low-octane gasolines are upgraded to gasolines which upon addition of tetraethyl lead have octane numbers of 95. The commercial development of U.O.P. Platforming, a catalytic reforming process, is an excellent example of the rapidity with which the oil industry moves to meet demands. Announced in March 1949, this process is now operating in 22 units with a throughput of about 80,000 bbl. per day and a total of 58 units with daily capacity of 309,000 bbl. have been contracted for.

The summary effect of these developments is tremendous. The use of the thermal and catalytic processes has made unnecessary the production of 40 billion barrels of crude oil since the first cracking units were installed in 1913. At present the saving from both greater quantities and better qualities of fuels is saving about 2 billion barrels of oil per year. When the 12-to-1 compression-ratio engines which require 100-octane gasoline come on the market, motorists will obtain 40 per cent more miles per gallon than they average today. At the present level of consumption and price of gasoline, this savings would amount to 4.5 billion dollars per year.

Aviation is now dependent upon adequate supplies of even higher-performance-rating gasoline. In the 3 years from 1949 to 1952 the production of aviation gasoline in the United States increased from 128,700,000 to 203,000,000 bbl. per year and military specifications run as high as 115/145 performance rating. Our commercial fleets which flew over 12,350,000,000 passenger miles and 254,188,642 ton freight miles in 1952 would not be possible without adequate supplies of high-octane gasoline.

Jet-propelled planes present new fuel problems to the oil industry. The fuel needed for the turbines of jet planes must have high heating value per unit weight, low carbon-forming tendencies and low freezing point because of the low temperatures at the high altitudes of 7 or 8 miles where the planes operate most efficiently. These requirements point to kerosine or light gas oil and heavy ends of gasoline.

Another fuel of major importance in our vast transportation system is diesel fuel. It is used in many of the trucks and buses on the road and by a large proportion of railway locomotives. The rapid dieselization of railroads is most spectacular. The first diesel engine in railroad history was put in service on the Burlington in 1934. In 1945 the number had climbed to 3,816 and at the present time railroads have 21,000 diesel locomotives in service and 20 out of 140 Class I railroads are completely dieselized. In 1952 diesel electric locomotives accounted for 65 per cent of the gross ton-miles of all railroads, with coal-burning steam locomotives accounting for 27 per cent, oil-burning steam locomotives 7 per cent, and electrical locomotives 1 per cent.

. . . "use of the thermal and catalytic processes have made unnecessary the production of 40 billion barrels of crude oil since the first cracking units . . ."

The reasons for rapid acceptance of diesel locomotives are numerous. The fuel efficiency of a diesel locomotive is 26 per cent compared with 7 per cent for a steam engine. Diesel locomotives are much longer lived than steam. The first Burlington diesel is still in service after 2.5 million miles of travel, while the average steam locomotive is sent to the scrap heap after 1.5 million miles.

Oil in Agriculture

The impact of the oil industry is perhaps greater upon agriculture than on any other phase of our economy. When the oil industry began, about 100 years ago, 65 per cent of the gainfully employed were in agriculture, while at present less than 15 per cent.

In 1915 there were 26,000,000 horses and mules on our farms. The increasing use of tractors for all types of farm operations has resulted in almost complete elimination of horse-drawn equipment and has drastically reduced the hours of manual labor formerly required. In 1952 the number of horses and mules had been reduced to 6 million, while 4.2 million tractors were being employed in place of 20,000,000 animals for various purposes.

Where irrigation is required power is derived from diesel and gas-engine-driven pumps. The energy derived from oil fuels on farms is estimated at 750 million horsepower, more than the total employed in all other industries. The tractors and trucks owned by farmers consumed over 295 million barrels of gasoline in 1952. Besides tractors and trucks, other mechanized equipment on United States farms includes 887,000 combines, 588,000 corn pickers, and 686,000 milking machines.

A striking development of the past decade has been the use of airplanes in farming. Originally employed for dusting crops with insecticides, airplanes are now employed for seeding, weed killing, fertilizing, and defoliating operations. At the present time there are about 9,000 specially designed and equipped airplanes in agriculture service. Some 1,800 companies are now doing custom work for farmers. The use of helicopters is increasing because of their ability to fly slowly and close to the ground. The labor and time saving by the use of planes is almost past belief. Operations such as rice seeding, cotton dusting, fertilizer application, and weed control, which ordinarily require from 30 to 60 man-hours of labor per 100 acres, can be taken care of in half an hour using airplanes.

The growing petrochemical industry has almost equally great implications on agriculture. Petroleum and natural gas are supplying hydrogen for the manufacture of ammonia, an essential plant food. The ammonia is frequently injected into irrigation waters or it may be made into ammonium nitrate or sulfate and applied dry. Our total ammonia production is now around 2 million tons a year and 75 per cent of this is made using hydrogen from natural gas. By 1960 it is anticipated that annual production of ammonia from natural gas will amount to 3.3 million tons.

Petroleum furnishes hydrocarbons needed in manufacturing such general purpose insecticides as DDT, BHC, Chlordane, and Aldrin. The results obtained by large-scale employment of these insecticides are spectacular to say the least. They have rid farm areas of mosquitoes, flies, beetles, and grass-

hoppers. Invasions of locusts in the Middle East have been completely routed by the use of Aldrin spread from low-flying planes. In one instance, 53,000 acres were completely rid of locust infestation in a short time.

There are some 80,000 species of insects in the United States and these may reach concentrations of 15 million per acre of cultivated ground. Annual crop and livestock losses to insects in the United States are around 4 billion dollars. Eventually these losses will be completely eliminated by the systematic use of insecticides.

Ridding animals of irritating insects results in more meat and in the case of cows in 20 per cent higher yields of milk. About 130 billion pounds of milk are produced annually in the United States and the 20 per cent increase would be 26 billion pounds if insects were eliminated from cows. Estimates indicate that the annual loss in meat due to insects is around 500 million dollars. In some cases steers have gained 50 extra pounds in weight when kept free from insect irritation. Experiments are in progress involving 10,000,000 range cattle to determine the benefits accruing if the steers are kept free from the annoyance of flies. Proportional weight increases have been noted when the skin of hogs has been greased to prevent insect irritation.

Chemicals based on petroleum are effective against fungi and plant diseases. The vapors of benzene or its dichloro derivatives prevent mildew in young cabbage plants and tobacco seedlings. Crop losses from fungi and other plant diseases are around 4 billion dollars a year so the elimination of these losses is a very worth-while project.

Chemicals manufactured from petroleum hydrocarbons are also used as fumigants on stored grain and cereals. Among these are ethylene dibromide, methyl bromide, allethrin, and nitroparaffins. Another pest which causes catastrophic losses of food in storage is the rat. It has been estimated that the 300 million rats in the United States account for the loss of food per year of $1.25 per person. A rat in a hotel eats $5 worth of food every year. Some of the rat poisons which have been found effective in control measures are based on petroleum products.

Losses in crops due to weeds amount to 5 billion dollars a year. It has been estimated that without weeding only 7 bu. of corn are obtainable per acre of ground where with complete weeding the yield can be 53 bu. In the field of weed killers, petroleum hydrocarbons are used in the manufacture of the well-known 2,4-D and the recently developed 2,4,5-T, which are used as selective herbicides for broad-leaf plants. Fractions of petroleum have also been used as sprays to rid carrots of growth-strangling weeds. In some instances weeds are killed by direct burning with oil flames. Present annual expenditures for weed killers are around 35 million dollars.

The soil fumigant D-D is recovered as a byproduct in the manufacture of synthetic glycerin. This mixture of chlorinated hydrocarbons is injected into soils infested with wireworms and nematodes. The fumigant not only kills the soil worms but leaves their carcasses as fertilizer. It has been estimated that 2 million acres or 3,000 sq. miles of farm land in southeastern United States is in need of soil fumigation before satisfactory crops can be obtained.

"Petrochemicals also include many of the high-tonnage industrial products such as acetone, alcohols, ethylene glycol (antifreeze), and formaldehyde which were formerly supplied entirely from other raw materials."

With half the world's population on an inadequate diet, the losses in food to insects, plant diseases, and weeds seem quite intolerable. Even in the United States where agriculture is on a high technical level, the present loss in crops and meat is about $83 a year per capita.

The petrochemical industry has not only made available large new sources of materials on which to base products but has also served as the basis for many new substances to replace dwindling supplies of metals and such natural materials as glass, wood, fibers, leather, and ceramics.

The plastics industry is a good example of a gigantic enterprise made possible by this relatively new supply of materials. In 1955, annual production of plastics is expected to reach 4.6 billion pounds, about twice present production and by 1975 may be a 25-billion-pound industry. These products range from large molded parts to paints and other coating materials. Through development of new and improved types, materials are developed to meet the requirements of our constantly changing existence. As an illustration, a 300-lb. cast-iron bath tub is hardly suitable for use in trailers which have in late years become the permanent homes of millions of Americans. Through the use of laminated plastic glass fibers, tubs weighing only 15 lb. have been made for this use.

The development of new synthetic materials in ample quantities, also has great import in making our nation self-sufficient. The synthetic-rubber industry best illustrates this point. The quantities which are available and the quality of the rubber now being made leaves us independent of imported supplies of natural rubber. This industry is almost entirely dependent upon petrochemicals, 2.5 billion pounds of them being used annually at present.

The nonrayon synthetic textiles, including nylon, dacron, dynel, acrilan, and orlon, are having many effects on our economy. Last year production was 260 million pounds and when projected plant capacity is completed in 1957, production will be about 600 million pounds. These synthetics will then account for almost 10 per cent of the total textile market.

Another major petrochemical market is synthetic detergents. With production beginning only in 1940, the synthetic detergents have taken away about half of the total soap market. Consumption of the detergents increased 21.9 per cent last year while soap declined 9.1 per cent. The importance of synthetic detergents, however, goes far beyond their effect upon the soap industry. These products like fibers, rubber, and plastics are tailor-made for specific purposes and improvements are constantly being made.

Petrochemicals also include many of the high-tonnage industrial products such as acetone, alcohols, ethylene glycol (antifreeze), and formaldehyde which were formerly supplied entirely from other raw materials. The shift in raw materials has been necessary because supplies of the former source materials were inadequate to meet present requirements. The result has been one of stable supplies and, in many instances, lower prices. Over half of the industrial ethyl alcohol, for example, is now petrochemical and is not subject to the fluctuating price nor availability of molasses. The range of products available from petrochemicals varies from methionine, one of the B vitamins, to T.N.T., and the list is growing. It is reported that 500 new petrochemicals went on the market in a recent 12-month period.

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Birmingham, 1	1536 North 50th St.	Havana	402 Abreu Bldg.	Pittsburgh, 19	Alcoa Bldg.
Boston, 10	1025–201 Devonshire St.	Houston, 2	2119 C & I Life Bldg.	San Francisco, 4	1554–200 Bush St.
Chicago, 4	2128 McCormick Bldg.	Los Angeles, 17	1523 General Petroleum Bldg.	Seattle, 1	1338 Henry Bldg.
Cleveland, 15	2204 Midland Bldg.	New York, 6	3347–165 Broadway Bldg.	Tulsa, 3	1606 Hunt Bldg.

REPRESENTATIVES AND LICENSEES

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Ateliers et Chantiers de la Seine Maritime, Paris, France
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Comprimo N.V., 21, Amstel, Amsterdam (C) Netherlands
Compagnia Tecnica Industrie Petroli, Rome Italy
Whessoe, Limited, Darlington, England
Motherwell Bridge & Engineering Company, Limited, Motherwell, Scotland
Sociedade Chibridge de Construcoes Ltda., Av. General Justo, 275, Grupo 306, Rio de Janeiro, Brazil

A MOTION PICTURE of the pattern of eye movements in reading is afforded by this instrument into which the man is looking. This is essential for the analysis of the present reading pattern and the development of an individual program of training to increase reading speed. The graphs at right indicate the improvement shown after training in how to read.

Executives Get Basic Training . . .

READING FOR PROFIT

by Horace Judson*

An executive, on the average, spends 2 to 3 hours daily just reading. If he can do his reading in half the time, he can take the saving in more time for conferences and for solitary thought, or use it to get more reading done

IN late autumn of 1952, a man announcing himself as "in the oil business" called the Reading Laboratory in New York, long distance. He said he would be in New York for 2 weeks of conferences, and asked if that would be long enough to take the Reading Laboratory's program. It was, he took the program, and did very well indeed. He happened to mention, later, that he was president of one of the larger western oil companies.

What is this "reading" program? It might be called the really **basic** training for the executive. More and more, these days, management is interested in programs to improve the quality of its junior executives. Training in handling of people, in administrative techniques, in specialized areas of engineering, in public speaking, and many other fields—all of these and more are available to companies which want to increase the quality and competence of the young men who will be at the top in 20 years. But one form of training is basic to **all** of these, indeed is so fundamental to all management levels that many companies institute training beginning with the president and working down from there. That single skill on which all of the others are based is **reading.**

Thoroughly tested and proved tech-

*Director, Philadelphia branch, The Reading Laboratory, Inc.

niques, which on the average **double** the reading speed of the executive, are used by such organizations as the Reading Laboratory with personnel at the supervisory level and above. The need is evident.

Executives, on the average, spend at least 2, usually more than 3, hours each day just reading. That's from 10 to 15 hours of reading each week. It varies from day to day for any man, of course, but this is one-quarter of his working time each week, at least. And he doesn't read nearly all the things he should. Think for a minute: how often is **your** in-box empty of memos, reports, articles, correspondence?

The gains are evident too. If the executive can do his reading in half the time, he can take the savings two ways: more time for the meetings, conferences, and solitary thought which get the work done; or more time to get **all** of the reading done, including that extra reading which would certainly help, but which now gets sacrificed to the shortage of time because it's not **absolutely** necessary.

Furthermore, there are specialized techniques for handling various special types of material, like business letters or technical articles, which enormously cut the time of reading while increasing the reader's grasp of the material. Such techniques as these are developed in some cases by most readers who have a heavy load, but few readers stop to systematize them all.

There's another way to settle the time savings brought about by reading training. This view of the matter shows very well why it is that companies of all sorts are using such training. If a company pays a man $10,000 a year, it is certainly true that this man is worth somewhat more than this to the company in terms of the gross return he "brings in," in terms of that part of the company's gross which might be called "his share" of production. But this means:

	The Executive	The Company
Value received	**$10,000**	**$12,000 (probably a conservative estimate)**
Cost of 2 hours reading per day	**2,500**	**2,500**
Gain from doubling of speed		**1,250 increase in value to company**

And note that these are, all the way through, minimum estimates. The average executive, as we said, reads about 3 hours a day.

How is all this done? The techniques were developed at university research centers, starting over 30 years ago.

George W. Wolf, U. S. Steel Export president, reads on a reading-rate accelerator.

There is one basic fact on which the techniques are built: although it feels as if your eyes move smoothly across the line of print as you read, in fact the eyes make a series of brief pauses on the line—usually, in the untrained reader, one pause for each word. This means that speed of reading is mostly determined by the number of pauses made on the line.

Movie films taken of the light reflected from the eyes as material is read have shown these pauses very graphically, and you can see from the accompanying illustration of this, exactly how improvements of speed result from training the reader to **see more** at each pause.

Seeing more at each pause, the reader **gets all the words on the line.** Yet because he makes fewer pauses, he reads much faster, **Without missing any of the details.**

Can faster reading be done without sacrificing conprehension? That, of course, is the question immediately raised by anyone interested in reading improvement. The answer, out of the Reading Laboratory's experience with many hundreds of management-level personnel, is yes.

As noted, the primary technique for doing this is to see more at each pause. This is accomplished with the aid of the tachistoscope, a machine with a complicated name and a simple function. Phrases of several words in length are flashed very briefly and the reader records what he saw. The phrases start out short enough so that they can easily be seen all at once, but are flashed very briefly so that the reader has only one chance to look at it. He cannot make more than one pause on the phrase. Such phrases would be of this sort:

better service

vicious circle

no matter what

in record time

in the form of

safe and sound

By the midpoint of the program, through a process of gradually stretching the length of the phrases while keeping the time interval so short that there is still only time for one pause, the reader is taking in phrases as long as this:

list of satisfied clients

synthetic textile fabrics

we may have made an error

the signing of the treaty

electrically synchronized

reach similar conclusions

And by the end of the program, the reader is frequently able to get phrases of this length, still in just one glance:

the most critical requirements

further reading on the subject

high-grade optical performance

four underground-storage tanks

an opportunity for advancement

electronic measuring equipment

It was again at the universities—Harvard, Ohio State, University of Chicago—that the tachistoscope (the phrase-flashing device) was developed. The armed forces used it extensively during the war, first for training in

aircraft and ship identification, and later for reading training.

Accelerator . . . There is one other mechanical aid which is used for reading development. There are variations of the basic device, but the central idea is that a moving screen, which can be set at different speeds, comes down across the page of the book or magazine. This moving screen nudges the reader into taking full advantage in reading of his training in seeing longer phrases, because he must do so in order to stay ahead of the accelerator curtain. As the reader progresses from session to session of the Reading Laboratory 14-session program, the speed of the accelerator is steadily set up, so that it "nips at the reader's heels," continually exerting a definite push on his reading.

As will be noted from the illustration of the film strip of the poor reader, there are several other reading difficulties which may be present. One of these is the tendency to do a lot of rereading, going back several words on the line and then moving on again. This is usually not necessary, and is soon smoothed out by the accelerator's moving screen.

The reader also may start with a very poor "reading rhythm." He may make very uneven steps across the line, alternating very long and very short pauses. And he may, in some fairly rare cases, be very hesitant about coming back to the beginning of the new line, instead of making one swift and sure return sweep. This too, the reading accelerator smoothes out. It is for this reason, as well as the fact that the trained reader makes fewer stops on the line, that rapid reading is actually **less** of a strain on the eyes than is slower reading. Rapid reading makes very efficient, rhythmical use of the eyes, while slower reading is inefficient, uneven, strain producing.

Since the war, a large number of reading clinics have been started. Most of these are connected with universities, and are primarily designed to improve the reading of college freshmen, although they are only too glad to bolster their funds with industrial programs in their neighborhood, when they can get them. Very few organizations have taken the time and research to adapt the basic techniques specifically to the needs of executives, although there is a rapidly growing demand for such training.

When the basic techniques are used for a program of company training, they should have the following features for maximum benefit to the company:

1. Training performed on company premises, to save time in coming and going for the busy top-echelon men who profit most from such training. This can be done, because the equipment is highly portable.

2. A strongly individual orientation. With individual, desk-top equipment, each man can proceed at his own best pace, not having to "keep up with a group," and, on the other hand, never being forced to hold his pace back to the level of the group. With small groups of men (seven men to a group leaves the highly trained reading counselor free to spend time with each man on his individual problems) scheduled for two or three training sessions each week, each session 1½ hours in length, maximum progress in speed and comprehension can be assured.

3. A strong business orientation. Materials used for training should include a high proportion of business and technical-type reading, most preferably with a good deal of material taken directly from the company's own field. This would include two aspects: material for reading which is taken from trade journals and business papers in the company's own field, and material specifically designed to increase reading efficiency in various types of reading which are found only, or almost exclusively, in business situations—the business letter, the interoffice memo, and so on.

4. Proper and adequate **motivation.** Training directors are aware of this need, but many others may not realize how important it is for the men taking a program of this sort to be shown specifically and in many ways exactly how the application of the techniques suggested will save them time and effort. Of course, the purpose of reading training is to save time on the job.

Typical Reading Program

With these prerequisites, a typical program of development reading breaks down something like this:

1. A session of 1½ hours of preliminary exercises and tests designed to find out exactly what each individual is doing **now** in his reading. These exercises measure a number of things very intensively: general verbal abilities; vocabulary; and reading speed and comprehension with a variety of different types of material.

2. Half an hour of individual testing, to get a film-strip for each man of his eye movements in reading, and to give each man a check of his reading vision in order to be sure that vision itself is not a factor which would interfere with reading progress.

3. The full results of both of the above are discussed with each participant in an individual interview lasting about half an hour. At this time he learns exactly how he did in the thorough measurement of all aspects of reading. At this time he sees his film strip and is shown the various things he is now doing as he reads.

At this point, the preliminary "diagnosis" is over, and the counselor can work closely with each individual on his own particular problems. The program itself consists of fourteen 1½-hour sessions. Each session breaks down something like this, although the order of parts will vary:

1. Half an hour of work with the tachistoscope.

2. Half an hour of work with the reading accelerator.

3. Fifteen minutes of discussion and on-the-spot practice of specialized techniques for more efficient **business** reading.

4. Fifteen minutes of exercises designed to measure from day to day the progress of each participant on each of the various levels of difficulty of reading material. Both speed (in words per minute) and comprehension are measured, so there can be no case of speed improvement which sacrifices comprehension.

And at the end of the program, retesting and a final, individual interview determine and explain the progress of each man.

All the way through, test results and progress of each man are kept a confidential matter between counselor and reader. An over-all report of progress is submitted to the company, however. What sorts of results do these reports show? Well, for one company—National Starch Products Co.—there was an **average** improvement (all men in the program, and including progress on all levels of reading difficulty) of 115 per cent.

To date, over 200 executives trained in various locations in Venezuela, for the South American subsidiary of an American oil company, have averaged more than 100 per cent progress. There, because of the size and location of the program, the Reading Laboratory could arrange an unusual degree of special attention to the specific reading problems of the oil industry. This specialized knowledge is currently being applied to a pilot program for the home office of another of the largest American oil companies in Manhattan, for 28 men including the president.

Speed Up Your Reading

by Prof. Hal Johnson*

IMAGINE, if you will, a busy oil man sitting behind his desk. Before him rests a pyramid of letters, reports, memos, etc.—ominous, forever threatening. He shudders at the sight, for every piece must be read and action taken on each.

At this moment, the mail boy walks up and deposits the morning mail atop the already tottering heap of papers. The busy oil man protests feebly. The mail boy, unconcerned, moves on to the next office.

Of course this little scene is exaggerated but it exemplifies the current reading plight of many people in the oil business—drilling, producing, refining, pipe lining—who are plagued with an abundance of material to read, and who, at the same time, cannot keep pace because of poor reading skills. Meanwhile, a backlog of reports, documents, memos, articles, and letters stack up, precipitating an avalanche!

If we were to take our busy oil man aside and tell him that he doesn't know **how** to read, he would probably look puzzled and answer, "Why, of course I can read. I've known how since the second grade."

At this point we tell him that he **can** read but reiterate the fact that he doesn't know **how** to read; the emphasis being on the **how.** You see, he probably isn't aware that most formal reading instruction ceases after the third or fourth grade; and the reader, equipped with the bare rudiments of turning symbols into words, is ushered forth into a reading world to fend for himself.

After the fourth grade, little or no time is allotted to the improvement of the reading skills and the inefficient reader continues his slow, plodding way while the reading material becomes more difficult and larger in quantity.

Learn to Read 50-100 Per Cent Faster!

Studies point out that the average adult reader reads about 250 words a minute. Studies also point out that it is possible to increase your speed of reading from 50 to 100 per cent without loss of comprehension. Now, the point is, if we are to help the slow reader out from under the stack of material that crosses his desk each day, we must instill in him an effective set of reading skills.

The question that now poses itself, and rightfully so, is—**how?** Perhaps it is best to discuss the salient **hows:**

1. Find out how rapidly you read. Select from a magazine of your choice an article of interest, and then read for exactly 3 minutes. You can time yourself. Read with the intent of comprehending. Speed is of little value if you have no idea of what you are reading. Determine your rate in words read per minute by multiplying the number of lines read by the average number of words per line. Divide the number of words read by three and you have your score.

2. Force yourself to move ahead. Don't go back over material that seems "hazy," but try to clarify meanings as you progress down the page. You see, the more regressions made (moving back), the slower the reading will be. At first you can expect some loss of comprehension. When the new reading habits become established, loss of comprehension becomes negligible.

3. Before reading, survey the material to be covered. This will give you a general idea of what the material contains and helps distinguish main ideas from details. Important clues are those that are set off in bold-face type or in italics. By this method, you learn to anticipate in your reading what the author is going to say. This makes for increased speed.

A good example of this is your reading of a technical report. After you have read enough of them, you soon learn to anticipate the makeup of the parts and to catalog the different sections before the author officially sorts the data and tests out page by page.

4. Group words into thought units. Words have more meaning when they are grouped together to form an idea. If we are word readers, it takes us much longer to achieve the meaning of a line of print.

For example, let's take the sentence:

The secretary handed the mail to the boss.

Don't read it word-by-word, like this:

The/secretary/handed/the/mail/to/the/boss.

Break it into thought units and read it like this:

The secretary/handed the mail/to the boss.

5. Don't read every word. The efficient reader does not take in unimportant words such as **and, a,** or **the,** but supplies them automatically after getting the idea of the phrase. If we omit the excess baggage in the sentence: — apple — day keeps — doctor away, we have not altered its meaning, but have increased our speed of reading by dropping the **an, a,** and **the.** Try it. It works.

6. Notice your eye movements. The eyes should move in a definite rhythm, stopping about the same number of times on each line and pausing about the same length of time at each fixation. There should be few if any regressions. You should make about three or four fixations to the line. You can check your own eye movements by having someone count the number of pauses your eyes make when traveling across a line of print. When your eyes reach the end of the line they will swing back to the next line like a typewriter carriage.

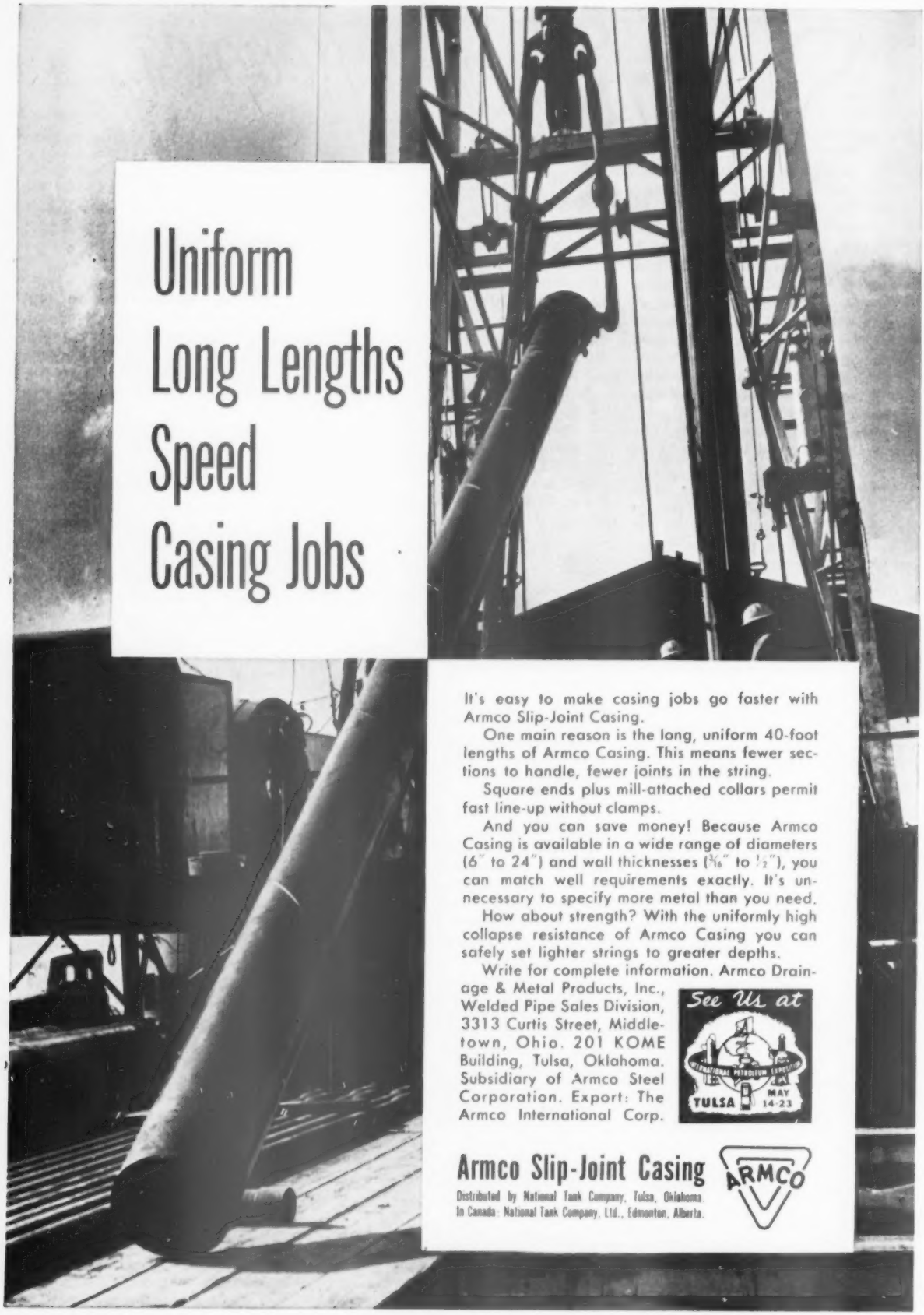
7. Familiarize yourself with the "jargon" used in your particular business. For example, in reading business letters, how often do you encounter such time-worn expressions as **At your earliest conveniences** or **enclosed please find** or **in receipt of** or **your letter of?** They are countless. These phrases are but hackneyed introductions to the data that are of importance. Pass over them quickly. They have little meaning and are time consuming.

8. Don't interrupt your reading to look up unfamiliar words. Jumping back and forth from the dictionary to the reading takes time and tends to make you lose interest in the material you are reading. Check unfamiliar words, and look them up later.

2. Time your reading at least twice a week. Keep a record of your gains. Reading improvement is constant. No matter how rapidly or how well you read, you can always improve. Don't rest on your oars—practice, practice.

Well, there you have it. Put these helpful hints into action, and in a matter of weeks you should be reading magazine articles and fiction at 500 or 600 words a minute. Start **now!**

*Director, Reading Improvement Laboratory, Case Institute of Technology.



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AID TO EXECUTIVE DEVELOPMENT . . .

Reading Business Magazines for PROFIT

"We grow as long as we're green. In that pleasant idea you can taste the real flavor of the business press, and can put your finger on why it is such a valuable tool for development."

by William K. Beard, Jr.*

THE business press offers management what one publishing house aptly calls "America's intercom system"—a sharply tuned connection with the preponderant majority of keen-minded, **growing** individuals, operating on a wave length of their amazingly diversified job interests.

Do you seek the job environment of rotary drilling, or of petroleum production, or oil refining? Are you concerned with reservoir engineering, or cycling plants, or pipe lines? Have you a purpose in ferreting out the alert-minded men who build pump stations, or sell compressors, or design cat crackers? They're present and accounted for on the subscription rolls of responsible petroleum publications—adding up to a vast reservoir of **technical** readership, ready for a host of wholesome tasks management can—and does—put it to. (Observe, in passing that the management function itself has it specialized trade publication.)

What are some of the ways this versatile business press can help management reach its crucial goals?

Here are **six** homely, easily grasped things you might do to increase **your** own field:

1 SET THE EXAMPLE. Keep on being a good reader yourself. Too often a man who has "arrived" sheds his business paper as if it were something altogether adolescent. There are strong reasons why management men should be avid readers of business papers. Topping the list would be the all-out importance of keeping abreast of new developments. The biggest word by far in the business editor's vocabulary is NEW. He is everlasting searching, searching, searching for whatever is new in his field—new ideas, new products, new headaches, new opportunities. If that isn't a wholesome diet for management people, what is?

The boss should also set a good example, and not too subtly let it be observed that **he** makes and takes the time to digest his business paper. It can be done easily enough and without affectation. Even as simple a thing as being seen on his way home with a paper in his pocket conveys a potent suggestion. Let him be a live demonstration that business-paper readership is, in honest fact, an instrument of growth.

Then, too, the management man should know what is in his business press so he can **do something** with the usable information he uncovers. He can act on it himself, or pass a word along, or plan some course of action. He shouldn't complacently assume that the dope will reach him automatically. He should be his own business-paper explorer and interpreter.

2 JOIN FORCES with your magazine. Feel a real sense of partnership with the press of your industry, and be an **active** partner. It is **your** magazine, serving **your** interests; it is **your** responsibility to help it do the job well.

How? By forthrightly sharing or contributing material. By being **constructively** critical of editorial objectives and content, the pat on the back as well as the kick in the pants. By refraining from effort to coerce editorial opinion, or trying to get away with something for free in the way of publicity. By a host of small things you can do to show that you have pride in the press that serves your business, and sincere desire to help it do a better and always better job.

3 STIMULATE EMPLOYES' READING. Take definite steps to stimulate reading all along the line of executive horsepower. It's axiomatic that a **well-informed** employe group is a **better** group.

An excellent way to lubricate reading is to encourage personal subscriptions. Hundreds of companies are doing this successfully by offering to pay part of the cost. Not **all** of the cost. The combination of the **employer** evidencing desire, and the **individual** investing his own money, has the best effect. If you don't have a part-pay subscription plan at work, it is recommended as a rewarding investment.

Another reading appetizer is to give your people regular samplings of pertinent material appearing in current issues. It can easily be done by displaying articles on bulletin boards, plugging them in staff bulletins and internal house organs, circularizing reprints, and a dozen more ways. This is a fine project for the company librarian, or some other **specified** and properly qualified member of your staff.

The matter of stimulating business reading is important enough to warrant serious consideration of a course in the technique of reading right within your own group. We are gradually discovering that ability to read with combined speed and comprehension is a learnable technique which, once acquired, is an enormous asset to any man in business. Reading-aptitude courses are being given in increasing numbers on our schools and colleges and in adult educational circles; they are certainly proving the feasibility and the rewards of how to teach people **how to read . . . better, faster.**

Hasn't management been kind of slow in grabbing at this tool for executive development?

4 USE ARTICLES IN TRAINING. This suggestion has to do with integrating editorial content with company training programs and conferences, and in other ways making concrete use of current material. Probably this is the most frequent use management makes of the business press, and the most practically effective. Examples are all around us of business-paper content being applied to apprentice and cadet engineering training, foreman and supervisor programs, in study groups, and so on. Provocative articles, like studies on cost control, frequently are the cause of special meetings. "How to" stories are widely employed in sales-staff get-togethers.

(Continued on page 460)

*President, Associated Business Publications. Adapted from remarks prepared for a panel discussion on "Tools for Executive Development" at recent annual conference of the Society for Advancement of Management, New York.

DIRECTORY OF EXHIBITORS AND EXHIBITS

. . . at the Thirtieth Anniversary International Petroleum Exposition

LISTED here in alphabetical order are the names and display locations of exhibitors at the International Petroleum Exposition, together with names of personnel at the exhibits and brief descriptions of equipment shown. Many exhibitors are displaying the products of several manufacturers, and the larger displays include items in addition to those listed in this directory.

A-1 Bit & Tool Co.
Houston, Tex.
Block 104
In attendance
C. L. CLAUSEL, C. B. McDONALD, J. R. YANCEY, E. J. ROBISHAW, H. E. ESTES, T. H. SALTER, F. M. PRELL, J. C. LISLE, H. C. TRIMBLE, A. N. SEAY, A. J. PRATT, G. S. LAWRENCE, R. E. THOMPSON, T. E. HALE, J. R. GRACE, AL WOELFEL.

This company is featuring four of its products. One of these items is a rotary side-wall core barrel, a reduced replica of the standard A-1 rotary-type side-wall core barrel. The tool is designed for operation in open holes as small as 6 in. in diameter. Another item is the company's Sure Shot deviation recording instrument which uses a simple plumb bob to measure angle slope of the well bore. The tool contains no delicate instrument and it operates within a steel protective case.

An expanding type of casing mill with longer and heavier knives than previously used is the third tool shown. A guide rib in the body of the mill throws the path of rotation off center or eccentric, causing the knives to cut with a sawing action.

The fourth item featured is the A-1 Burris key-seat wiper, designed to prevent sticking drill pipe in key seats on coming out of the hole. The unit is a drill-collar assembly consisting of two bumper subs, a mandrel, and a slip bar sleeve. On coming out of the hole, the sleeve contacts all key seats first. The square, sharp shoulder of the sleeve actually cuts into the key seats, wiping them to a passable outside diameter.

A-B Commercial Finishing Co.
Tulsa, Okla.
40 Kansas Building

Accurate Fire Equipment Co.
Tulsa, Okla.
38 Kansas Building

Acid Engineers, Inc.
Lakin, Kans.
92N North Area

This firm, the only service company of its kind headquartering in Kansas, is featuring its recent expansion program. Technicians are on hand to discuss the company's coordinated oil and gas-well chemical service for the entire central and western half of Kansas.

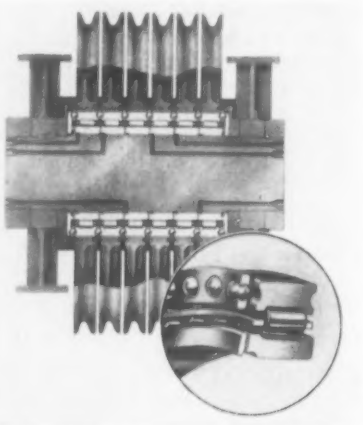
Acme Fishing Tool
Parkersburg, W. Va.
47-48 California Building
In attendance
KARL L. ELLIOTT, MERLE ZUMBRO, MERLE DECKER.

Acme is displaying its line of cable tools.

Acme Oil Tool Co.
Oklahoma City, Okla.
127-128 Texas Building
In attendance
BILL McFARLAND, DON BURNER, E. J. McMANN, WENDELL McCRACKEN, "SODA" MOLES, PAUL RAYMOND, V. R. SMITH, CLONNIE AKINS, HAROLD SADBERRY, TOM SEAGO, DEAN DUNSWORTH, G. L. HARRIS, L. M. (STUB) SNEDEKER, RENE CROTHERS, LON WHITLEY.

Aetna Ball & Roller Bearing Co.
Chicago, Ill.
83-84 Texas Building
In attendance
W. A. WOOD, FRED CHILGREN, J. J. ROZNER, H. F. VENDT, JOE DILLON.

This company is showing its specially engineered bearings for heavy-duty applications in oil-country equipment. Featured is a crown and traveling-block bearing. Among other special bearings on display is a massive rotary table main bearing which employs balls 3 in. in diameter and has a load capacity of over 200 tons. The balls are of chrome steel and are keyed into a solid bronze retainer.



Aetna crown and traveling-block bearing installed in a six-sheave Beaumont unit.

Aero Design & Engineering Co.
Bethany, Okla.
38 Silver Lane
In attendance
CYRUS T. WILLOCK, Downtown Airpark, Inc.; and HERB JOHNSON and E. R. MORRIS, Aero Design & Engineering Co.

Aero Design & Engineering Co. and its associate exhibitor, Downtown Airpark, Inc., are featuring the Aero Commander, a new twin-engine executive airplane. The 200-m.p.h. aircraft carries from five to seven people, according to seating arrangement, on trips spanning half the continent without the necessity of stops for refueling.

New twin-engine executive Aero Commander.

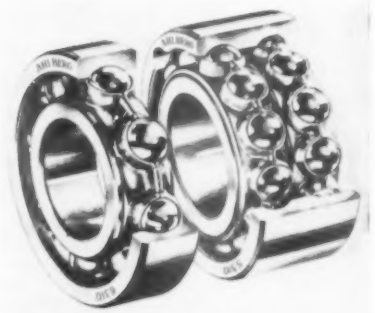
Aeroquip Corp.
Jackson, Mich.
138 Oklahoma Building
In attendance
VIC EMERY, CHUCK ORWICK, JIM TILFORD, M. W. BRANDAU, GEORGE FISCHER, CHUCK SAWHILL.

Aeroquip is displaying its full range of flexible hose lines, detachable fittings, and self-sealing couplings. Aeroquip hose lines may be quickly assembled on location by cutting bulk hose to required length and attaching the particular fittings needed. Aeroquip hose can be used for handling diesel fuel, lube oil, butane, propane, water, air, and hydraulic fluid.

Ahlberg Bearing Co.
Chicago, Ill.
12 California Building
In attendance
P. H. STAERK, O. K. WRIGHT, F. O. BURKHOLDER, R. L. SCHUTTE, E. J. KLIMCZAK.

Ahlberg is exhibiting its line of antifriction products including conventional types of self-contained ball bearings, pillow blocks, and other mounted ball-bearing units.

Among the mounted units shown are two



Single and double-row Ahlberg radial-thrust bearings.

You **Brown & Root** fellers sure make the fur fly!

Farmers and Board Chairmen, too, are amazed at the rapid progress of Brown & Root projects. But, to Brown & Root, fast—economical completion is good business . . . it's why successful clients have continued to award repeat contracts to our company.

Brown & Root is an entirety, unique in its field . . . in that we can do all of our work, from process engineering through construction.

We take pride in our projects and a real delight in probing for better methods in engineering and construction.

These facts, plus almost 40 years experience in heavy construction and engineering, can be of immeasurable benefit to you.

If your company contemplates new construction or expansion . . . a call will put Brown & Root experts at your disposal . . . no obligation, of course.

BROWN-BILT

BROWN & ROOT, Inc. *Engineers • Constructors*

P. O. BOX 3, HOUSTON 1, TEXAS

CABLE ADDRESS — BROWNBILT

Associate Companies — BROWN ENGINEERING CORP. • BROWN & ROOT MARINE OPERATORS INC.

of the company's pillow-block series designed for light-duty applications. One series is insulated against vibration by a molded cushion of oil-and-grease-resistant synthetic rubber. This series is also electrically grounded and prelubricated.

The other series, also prelubricated, is equipped with a single-row ball bearing specially ground to permit shaft deflections and misalignment up to 1°. The housing is sealed with neoprene.

Airetool Manufacturing Co.
Springfield, Ohio
151-152 Oklahoma Building

Air Reduction Sales Co.
Division of Air Reduction Co., Inc.
New York, N. Y.
30-33 Oklahoma Building

In attendance

I. B. YATES, E. H. ROPER, J. W. CUNNINGHAM, J. R. McCLENDON, H. D. MANN, R. C. CASPAR, W. C. BETTES, O. F. WILKINSON, A. E. GANDER, J. C. FRICK, C. T. BURGGRAF, J. E. BLESI, W. CHAMPION, W. W. LITTLEFIELD, S. TREADWELL, A. E. KENNEDY, J. I. SAMPSON, G. F. VIETOR, L. D. SUGG, J. W. BRAMBLE, J. LUND, H. J. KORNER.

An automatic Heliweld hardfacing unit, a new development by Air Reduction is the feature of this exhibit. The unit employs improved methods in depositing tungsten carbide hardfacing material on tool joints. In operation, the Heliweld arc melts the base metal, producing an elongated pool into which the tungsten carbide particles are poured behind the arc. The rate of tungsten carbide feed from the vibratory hopper mounted on the automatic Heliweld head is electrically controlled with high accuracy.

Other products displayed are an Oxygraph cutting machine, Aircomatic welding, a d.c. Bumblebee arc-welding machine, a Hornet arc-welding machine, plus miscellaneous torches, regulators, and hardfacing equipment.

Automatic Heliweld hardfacing unit.

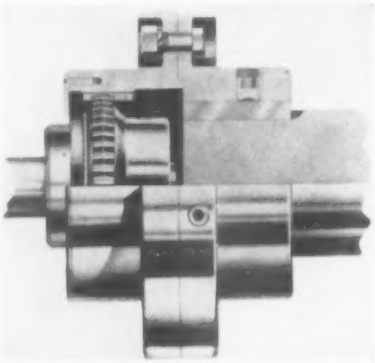
Ajax Flexible Coupling Co., Inc.
Westfield, N. Y.
Block 208

In attendance

R. G. CADY, C. W. BELDEN, RAYMOND L. TATE, JAMES C. ROSE, BOYD GOODHART, A. W. NASH.

This company is displaying its line of Rubber-Bronze bushed couplings and its new Dihedral coupling for power transmission. A Lucite working model of the Dihedral coupling is in operation, and in addition, a floating-shaft Dihedral coupling with all parts cadmium plated is featured to illustrate its application in cooling-tower service.

The Rubber-Bronze bushed couplings are made with both rubber and neoprene bushings. Ajax Dihedral couplings are designed to handle misalignment between direct-connected machines.



Ajax Dihedral coupling, floating-shaft type.

Albina Engine & Machine Works
Portland, Ore.
Block 204

Albina is demonstrating its electric and air-powered mechanical stirrups with curved staging plank. This equipment is designed for erection and maintenance of storage tanks and pressure vessels from 10 to 150 ft. in diameter. The curved staging planks are fabricated in standard lengths up to 28 ft.

Albina curved swing stage.

Alco Products Division
American Locomotive Co.
Dunkirk, N. Y.
26 Park Lane

In attendance

W. E. BELINE, CHARLES BYRNE, MARTIN ETTINGTON, P. W. GEISLER, S. KOPP, E. N. SIEDER.

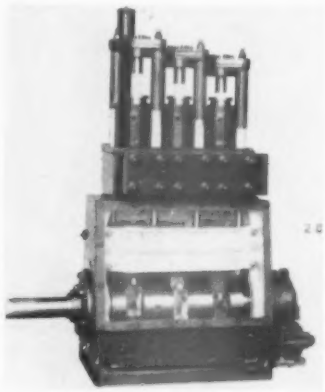
Alco Products Division's equipment is shown at the exhibits of Tubular Exchanger Manufacturers Association, Inc., Block 105, and Koppers Co., Inc., 73-75 Texas Building. The exhibit at Block 105 is a heat-exchanger model and at 73-75 Texas Building a model Aircooler for which Koppers Co. manufactures fans.

Aldrich Pump Co.
Allentown, Pa.
30-31 California Building

In attendance

B. O. BUSHNELL, Bushnell Controls & Equipment Co.; LLOYD T. GIBBS, Lloyd T. Gibbs Co.; FRANK D. COSSABOON, R. B. Moore Supply Co., Inc.; W. J. CAMPBELL and L. F. GRIFFITH, Petroleum Machinery Corp.; O. W. MULLER, M. O. SCHULTZ, P. F. LAROCHE, and G. ALLEN SKINNER, Power Specialty Co.; E. L. REEVES, Reeves & Skinner Machinery Co.

Aldrich is showing its line of direct-flow pumps which are manufactured in triplex, quintuplex, septuplex, and nonuplex models. The Aldrich 3-in.-stroke, 50-hp. unit with a plunger range from 1⅛ to 1⅞ in. handles pressure from 2,000 to 4,400 psi. The 5-in.-stroke quintuplex, 150-hp. unit is another of the Aldrich line.



Aldrich pump triplex unit.

Allan Edwards, Inc.
Tulsa, Okla.
3-5 California Building

In attendance

J. V. DONOHOE, R. D. BOUTROS, M. N. DANNENBAUM, S. S. WILLIAMS, Mixing Equipment Co.; WALTER ENNIS, Oil Well Water Locating Co.; FRANK DAVIS, JR., Davis Emergency Equipment Co.; A. J. EDWARDS, SR., A. J. EDWARDS, JR., D. B. MATHEY, DAVE MOSS, Allan Edwards, Inc.

This exhibit comprises Allan Edwards, Inc., which manufactures concrete and also metal specialties for pipe-line and other branches of the oil industry, and six other manufacturers. The manufacturers represented by Allan Edwards, Inc., are:

Mixing Equipment Co., Rochester, N. Y.; Oil Well Water Locating Co., Long Beach, Calif.; National Foams Systems, Inc., West Chester, Pa.; Davis Emergency Equipment Co., Newark, N. J.; Autoclave Engineers, Inc., Erie, Pa.; Beryllium Tools Corp., Reading, Pa.

Allen Gauge & Tool Co.
Pittsburgh, Pa.
64 Kansas Building

In attendance

ROSS C. ALLEN

This exhibit incorporates a complete line of pipe gages. Three different kinds of internal and external gages are shown along with thread, plugs and ring gages, plus drunken thread gages. Also included are various other type gages.

Shown for the first time is a portable thread-form, optical microscope for checking thread-element of threaded pipe. This is comparable to the Zeiss portable microscope and is a comparatively new instrument in this field.

yours to use...

HOUSTON

CORPUS CHRISTI

CHICAGO

port of NEW ORLEANS

port of NEW YORK

GENERAL AMERICAN'S tank storage terminals

In 5 great markets General American offers you complete bulk liquid storage terminal facilities with no capital investment on your part. You use modern facilities, pipelines, manifolds, blending equipment. You have complete privacy.

All methods of bulk liquid transportation are available.

At the Ports of New York and New Orleans there is high-speed canning, drumming and barreling equipment—yours to use.

for dependability, see **General American**

GENERAL AMERICAN TANK STORAGE TERMINALS
a division of GENERAL AMERICAN TRANSPORTATION CORPORATION
135 South La Salle Street • Chicago 90, Illinois

NO-OX-ID protects

AT RIVER CROSSINGS

For submarine installations of pipelines, Dearborn's "B-7" specification materials will give long-life protection against the corrosive action caused by sea water. This 10" pipe was mill coated with NO-OX-ID 6X, No. 7 NO-OX-IDized Reinforced Asbestos Wrapper, NO-OX-ID Service Coat No. 15, and kraft paper. The joints were then protected with NO-OX-ID 6X and No. 7 NO-OX-IDized Wrapper, followed by an application of Rock Shield, banded over the entire pipe surface. The balance of the transmission line was also NO-OX-ID protected.

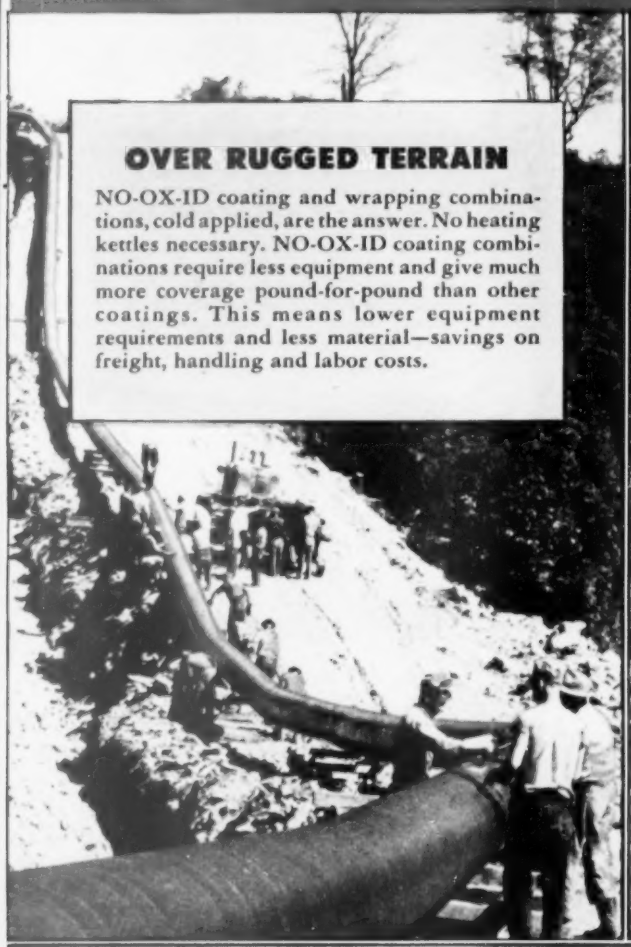
Dearborn TRADE MARK

DEARBORN CHEMICAL COMPANY
MERCHANDISE MART PLAZA
CHICAGO 54, ILLINOIS

THE ORIGINAL RUST PREVENTIVE

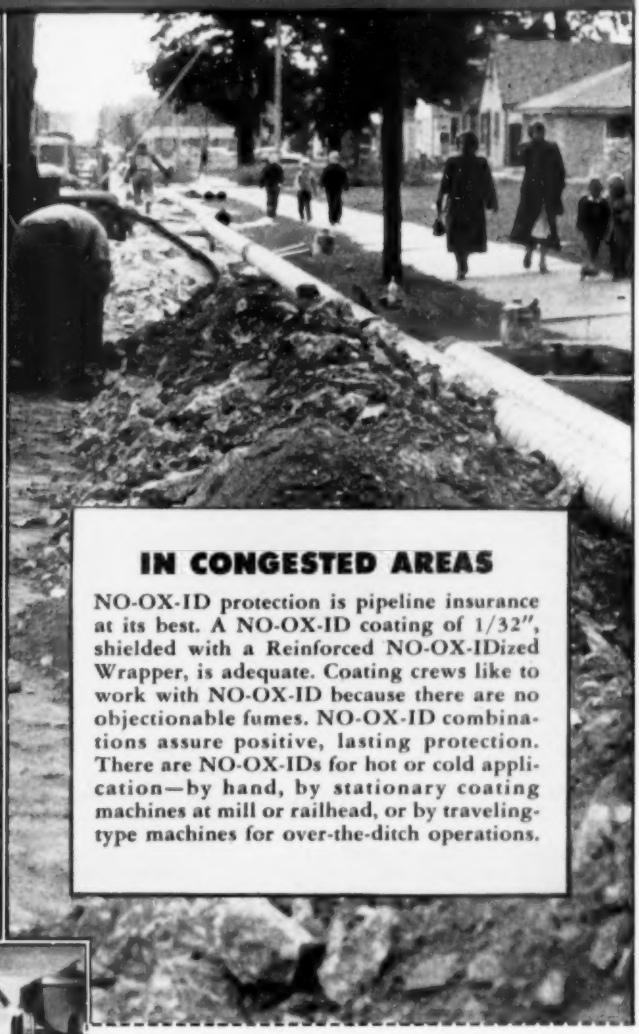
NO-OX-ID

PIPELINES everywhere!



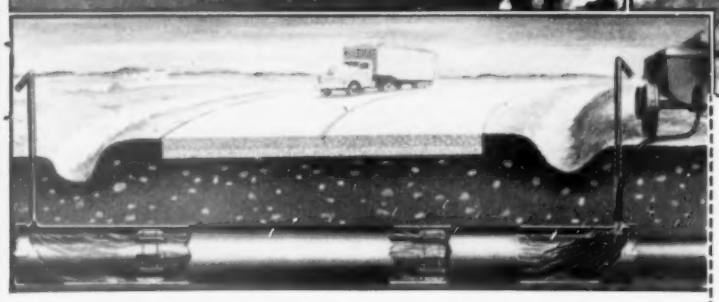
OVER RUGGED TERRAIN

NO-OX-ID coating and wrapping combinations, cold applied, are the answer. No heating kettles necessary. NO-OX-ID coating combinations require less equipment and give much more coverage pound-for-pound than other coatings. This means lower equipment requirements and less material—savings on freight, handling and labor costs.



IN CONGESTED AREAS

NO-OX-ID protection is pipeline insurance at its best. A NO-OX-ID coating of 1/32", shielded with a Reinforced NO-OX-IDized Wrapper, is adequate. Coating crews like to work with NO-OX-ID because there are no objectionable fumes. NO-OX-ID combinations assure positive, lasting protection. There are NO-OX-IDs for hot or cold application—by hand, by stationary coating machines at mill or railhead, or by traveling-type machines for over-the-ditch operations.



UNDER HIGHWAYS AND R.R. CROSSINGS

NO-OX-ID CM Casing Filler does the job. Contains additives, inhibitors and wetting agents to provide positive corrosion protection to both the exterior wall of the carrier pipe and the inside surface of the casing. Bulletin 3079 tells the complete story.

Dearborn Chemical Company
Merchandise Mart Plaza, Dept. OG
Chicago 54, Illinois

Please send

- ☐ a copy of "Protecting Underground Pipe from Corrosion with NO-OX-ID and NO-OX-IDized Wrappers.
- ☐ Bulletin 3079.
- ☐ Have a Dearborn Engineer call.

Name.....

Title.....

Company.....

Address.....

City.....*Zone*....*State*.....

I.P.E. EXHIBIT DIRECTORY

Allied Bearings Supply Co., Inc.
Tulsa, Okla.
1-2 Scientific & Technical Building

In attendance

"BUD" HULL, HARRY ALLEN, HARRY DAVIS, BILL ALLTON, CONAN SPARKS, JOHNNY RIDDLE, Allied Bearings Supply Co.; JAMES F. RICKETTS, E. W. FULLMAN, Fafnir Bearing Co.; H. A. ANDERSON, John Waldron Corp.; ROBERT BASS, Eberhardt-Denver Co.; T. A. KITCHEN, Owatonna Tool Co.

This company's exhibit is focused on the entire petroleum industry's antifriction-bearing requirements. Along with a wide variety of bearings, equipment for removal and installation of large ball and roller bearings is also displayed. Manual operations of conventional pulling tools, and the new hydraulic Power-Twin puller, produced by Owatonna Tool Co., Owatonna, Minn., are being demonstrated.

The newest addition to Eberhardt-Denver Co.'s products, a worm-gear reducer with built-in thermal modifier, is being shown along with heavy-duty internal geared couplings and the new lightweight nylon coupling, manufactured by John Waldron Corp. Technicians are on hand to answer questions and discuss problems pertaining to application and maintenance of antifriction bearings.

Allied Paint Manufacturing Co.
Tulsa, Okla.
259 Oklahoma Building

In attendance

RAY GUNN, FRANK PLATT, JACK DAVIS, EDDIE CARROLL, PAUL NORMAN, GEORGE FOSTER, GRADY SKILLERN, JR.

This exhibit illustrates the vast international industrial empire that the paint industry draws on for the many raw materials that go into the composition of the complex paints used in the petroleum industry. At this exhibit a large map of the world, spotted with many small lights showing different places from which paint materials are derived, is featured. These lights are synchronized with various small vials containing samples of the different raw materials from which paint is made.

Allis-Chalmers Manufacturing Co.
Milwaukee, Wis.
53-58 Oklahoma Building

In attendance

ROBERT W. McKEE, J. L. PLATT, R. I. MOORE, H. L. REYNOLDS, A. PHILLIPS, L. G. PARK, R. W. LOCKE, C. A. RICHARDSON, E. F. GREIWE.

A feature of this display is its new refinery pump. The exhibit also includes animated displays of a full-scale model of a 125-hp., tube-cooled motor; the Equiseal stuffing box for process pumps, and a cutaway of a chemical pump, along with static displays of a 6 by 6-in. single-stage, double-suction pump, and a splashproof squirrel-cage motor.

A complete Type H explosionproof starter with oil-immersed contacts, controls, Texrope drives, and water-conditioning equipment is also being shown.

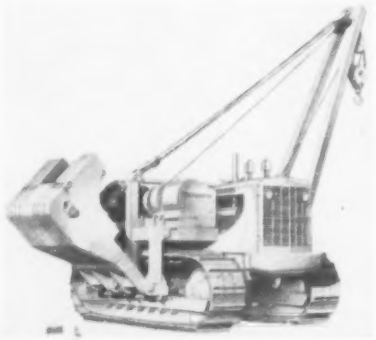
Allis-Chalmers Manufacturing Co.
Tractor Division
Milwaukee, Wis.
Blocks F and 201

In attendance

W. G. SCHOLL, FRANK MUSSELL, A. E. DORN, ERNEST FRANKS, H. T. LARMORE, H. M. FAULKNER, W. A. HEBELER, A. E. THODE, W. E. DILLON, NEIL A. POHL, W. R. ANSDELL.

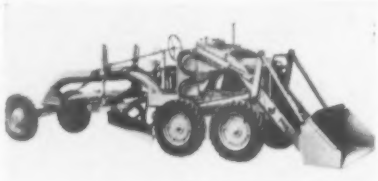
This company is exhibiting four diesel-powered crawler tractors, two motor graders, and an industrial wheel tractor. All are equipped with various types of equipment as used in the field, on pipe lines, and at refineries.

The world's largest crawler tractor heads the Allis-Chalmers line on display. This unit with 175 net engine horsepower, and featuring hydraulic torque converter, is equipped with "Tractomotive" side boom for pipe lining.



Diesel-powered crawler tractor with side boom.

Two other models, 109 hp. and 72 hp., have the new type Baker "no-push-beam" bulldozer. The 8-ft.-wide dozer blade is mounted directly to the tractor main frame and is hydraulically raised and lowered with the frame as a single unit. The 109-hp. unit is equipped with a Carco winch and headache rack and the 72-hp. model has a Tractomotive ripper. A second 72-hp. crawler has a Gar Wood dozer and winch, and headache rack. A 40-hp. unit is equipped with Tractomotive front-end shovel with 1-yd. bucket, and ripper on the rear.



Motor scraper with TLD loader.

An Allis-Chalmers 104-hp. diesel-powered motor grader, largest in the line, is shown equipped with scarifier and canopy top. A 40-hp. motor grader is equipped with rear-mounted Tractomotive loader having a 58-yd. bucket.

Wheel tractors are represented by a front-end loader and mower. The complete line of Allis-Chalmers power units equipped for a variety of work in the oil industry are shown in the exhibit of Fred E. Cooper Co.

Allison Division, General Motors Corp.
Indianapolis, Ind.
Block 10

In attendance

WALTER MYERS, A. W. CHRISTY, J. W. CROOKS, K. H. HOFFMAN, J. P. LORD, R. M. SCHAEFER, HUGH KIRTLAND, HOWARD CHRISTENSON, HORACE N. ROBERTS, J. A. LANE.

A quick-shift power transmission for heavy-duty trucks, shovels, cranes, tractors, and oil-drilling rigs is being demonstrated by the Allison Division of General Motors Corp. This display consists of a plastic, production-size Torqmatic converter. The actual flow of oil for torque multiplication can be followed by operating the electrically controlled display. Connected with the converter is a cutaway production model Allison Torqmatic transmission. Push buttons enable operation of the quick-shift features of this transmission. Power flow through the constant-mesh planetary gearing shows the three forward and the one reverse speeds of the transmission.

Alten Foundry & Machine Works, Inc.
Lancaster, Ohio
74-75 Oklahoma Building

In attendance

WARREN M. BENSON, C. W. (BILL) MOYER, EARL F. BROOKS, ROY A. LONGNECKER, RALPH GRIFFIN, CLEM FREEMAN, BOB LEDEKER, RAYFORD MARTIN, DON GRIGGS.

A new addition to Alten's line of eight pumping units is being exhibited. Although designed for shallow wells, the unit has an extra-long stroke which is 30 in. and adjustable to 26 or 22 in. The samson post, frame, and beam are of all-welded steel construction.

Other products displayed include two new Alten multipurpose tubing heads, a heavy-duty, pull-through type stuffing box with built-in oil reservoir and handle that permits packing takeup from every position, two polished-rod clamps, and a new casing support.

Alten pumping unit.

Aluminum Co. of America
Pittsburgh, Pa.
52-55 Scientific & Technical

In attendance

H. P. BONEBRAKE, W. F. MARSHALL, G. O. HOGLUND, E. D. VERINK, JR., E. T. WANDERER, C. J. HINTON, P. B. JACKSON, J. B. WEST, H. P. MORROW, K. K. REID, R. P. BLACK, JR., W. C. MONTGOMERY, H. A. GRAY.

"Cut Cost and Corrosion in the Process" is the theme of Aluminum Co. of America's display. Focal point of the exhibit is a petroleum-processing flow diagram on which are indicated the numerous points where aluminum products can be applied to reduce costs and corrosion.

Featured are such Alcoa products as Utilitube and fittings, heat exchanger tubing, pipe and fittings, and architectural products. Also displayed will be aluminum electrical products, fasteners, paint, and castings. Other special products shown include aluminum pipe wrenches and hand railings.

A laboratory-size drying unit demonstrates the use of alumina desiccants. Aluminas and fluorides are shown in a separate section of the exhibit. Central feature of this exhibit is a plexiglass model of the operation of alumina fluid catalysts.

American Air Filter Co., Inc.
Louisville, Ky.
16-17 Texas Building

In attendance

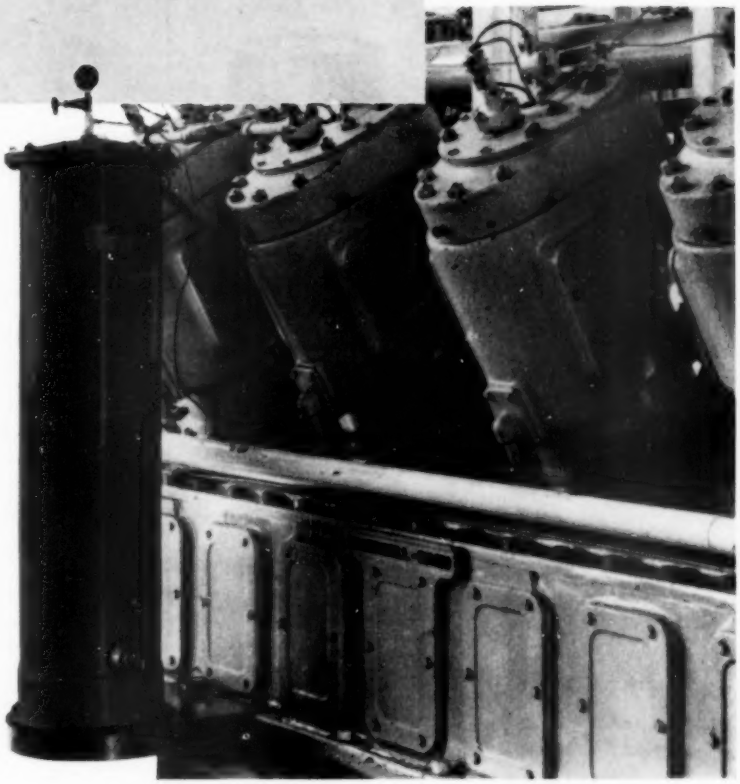
JOHN HELLSTROM, A. NUTTING, CHARLES C. SOWERBY, D. M. Mc-

It Takes Clean Oil to Pump Clean Gas

Wherever natural gas is produced, powerful engines must work night and day to keep it flowing through pipelines.

In more and more of those all-important pumping stations, you will find *Winslow Full-Flow Filters* protecting the engines from destructive acid, dirt and moisture that would accumulate in lubricating oil without effective filtration.

In any engine operation where down-time can mean disaster for your business or for the general public, it will pay you to follow the lead of so many of the oil industry's shrewd equipment buyers. Be wise. Be safe. Buy Winslow!



Winslow Model 21-1645-D Lube Oil Filter on Ingersoll-Rand Engine.

meet us at the **INTERNATIONAL PETROLEUM EXPOSITION: Tulsa, Oklahoma**

May 14 to 23, 1953

Visit our exhibit. See our filters in actual operation on leading makes of engines. Let us answer questions.

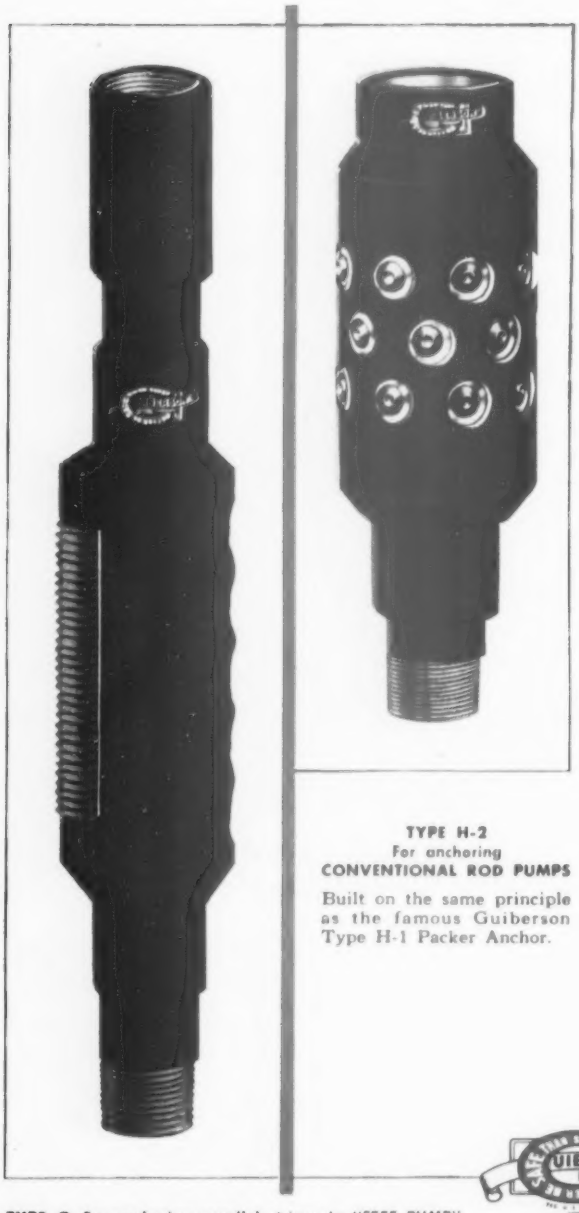
WINSLOW FILTERS

Winslow Engineering Company 4069 Hollis Street · Oakland 8, California

CUT PUMPING COSTS 3 WAYS

with GUIBERSON Hydraulic Pump Anchors

Cut first cost
Cut wear on string
Lift more fluid



TYPE H-2
For anchoring
CONVENTIONAL ROD PUMPS

Built on the same principle as the famous Guiberson Type H-1 Packer Anchor.

For parallel string "FREE PUMPS," for ROD PUMPS these new Guiberson anchors provide an ease of setting, a dependable grip on casing and a simplified release in two models. First cost is amazingly low. Operation is simple and sure — they save wear and tear on your string — let you lift more fluid through increased pump efficiency.

Anchor sets *automatically*, as soon as fluid level in tubing is higher than casing fluid level. No manipulation of tubing string is necessary. A series of *individual piston slips* operating hydraulically and independently of each other give positive grip on casing. Stabilizes tubing against all forces tending to cause movement. Holds equally well in any direction and may be run either-end-down. Anchor is easily released by normal methods of equalizing tubing and casing pressures or with bleed joints... either tension type (for single strings only) or pressure operated.

TYPE O. For anchoring parallel strings in "FREE PUMP" installations. Has tremendous by-pass area. Anchor grips casing with hydraulically-actuated piston slips and a fixed slip, which can be rotated to provide new gripping surface with each setting. Anchor is easily adjusted for different casing weights by changing fixed slip only. Very practical in conventional rod pump strings. Flat side by-pass permits running bombs in annulus.

A Guiberson Hydraulic Pump Anchor is a small investment for a big return in profitable operation. It will save you money — while it makes you money!

THE
GUIBERSON
CORPORATION
ESTABLISHED 1919 • DALLAS, TEXAS, U. S. A.
Sold By Leading Oil Field Supply Stores Everywhere

MAKIN, K. U. MEGUIRE, S. H. FAIN, C. B. ARTERBURN, A. B. CONANT, M. R. RUSH, R. V. SLOAN, JAMES C. BOYD, W. S. COOKE, L. J. CERCONE, J. H. MILLIKEN, HOUSTON HUBBELL, DALLAS DEEM.

American Air Filter is exhibiting its complete line of filters for cleaning engine and compressor intake air. Regular-size working models of three new products are shown in operation. In addition to the new products a unit viscous-type filter and a dry-type filter with disposable media are also displayed.

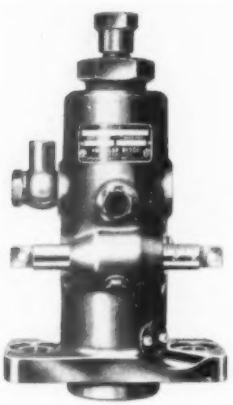
American Airlines
Tulsa, Okla.
Front of Texas Building

American Bosch Corp.
Springfield, Mass.
55-56 Texas Building

In attendance

FOSTER N. RERRY, DONALD H. SPICER, R. R. PARKER, R. L. VAUGHN, ROBERT FITZGIBBONS, GUILFORD HALKET.

American Bosch is exhibiting its complete line of products. Included are single and dual type electric windshield wipers, high and low-tension-type magnetos, special-service automotive generators and regulators, ignition coils, and diesel-fuel injection equipment. A featured item is a low-tension pulse generator designed specifically for large, high-compression natural-gas engines. This large unit supplies accurately timed, low-tension pulses which are stepped up to the required spark potential by means of single or dual spark-ignition transformers.



Type APF dual-fuel injection pump.

American Brass Co.
Waterbury, Conn.
34-35 Oklahoma Building

A wide range of Anaconda products is being displayed by American Brass Co. Among these products are heat-exchanger tubes, tube sheets and plates, welding rods, and flexible metal hose and tubing. Kodachrome slides of several welding-rod procedures are being continuously projected on Selectro-Slide equipment.

American Cable Division
American Chain & Cable Co., Inc.
Wilkes-Barre, Pa.
173 Oklahoma Building

In attendance

E. H. TODD, R. D. McNUTT, T. R. FOSTER, G. B. WALSH, W. D. MERCER, J. H. MUIR, G. A. FAERBER, R. B. SCHACKLE.

Featured at American Cable Division's exhibit is its preformed Tru-Lay wire rope. On display is the company's line of wire-rope products for oil-industry service.

American Car & Foundry Co.
Valve Division
Detroit, Mich.
54N North Area

In attendance

JOHN C. COONLEY, WILLIAM A. GORMLEY, W. G. STOLBERG, D. R. PHILLIPS, W. C. MOONEY, H. C. CHESTON, F. HAROLD HOLLISTER.

The feature at this exhibit is a full-round-port, lubricated-plug valve. Among the other lubricated-plug valves shown are units equipped with cylinder and Limitorque operators. An 8-in., worm-gear-operated unit is also being shown. Mid-Continent Supply Co. is also showing A.C.F. lubricated plug valves at its exhibit.

American Chain Division
American Chain & Cable Co., Inc.
York, Pa.
157 Oklahoma Building

In attendance

C. A. GOLDSTROHM, S. A. POAGE

Exhibited are various types of chains and attachments for oil-field service.

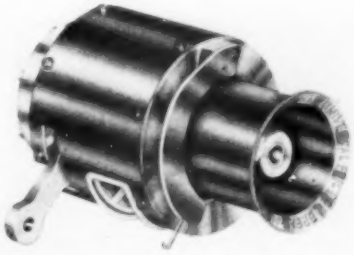
American Iron & Machine Works Co.
Oklahoma City, Okla.
159-161 Oklahoma Building

In attendance

M. G. McCOOL, C. L. GRIFFIN, E. E. RUBAC, W. R. WHEELER, JR., W. G. BAUM, F. E. WAGNER, B. E. SHARP, J. M. TAYLOR, T. E. ORRELL, BRYAN CURTIS, GLEN SEVERS, JACK R. GRAY, J. C. WITHERS, ROY MEREDITH, E. H. ROYLE, P. O. GILLIS, DURPHY P. COMEAUX, HERMAN LAWSON, ODUS GARDENHIRE, J. B. COULTER, W. G. McCHAREN, L. H. BUSBY, J. L. RICHARDSON, W. F. BEHRHORST, A. G. PULLEN, W. T. BIDDLE, W. L. MARTIN, H. K. CONLEY, JOE THOMPSON, GUY W. TUCKER, L. H. CHRISTIANSON, W. S. FERRIS, JOHN PRITCHETT.

American Iron & Machine Works Co. is featuring its Universal friction makeup and breakout catheads, designed for use on any size rig. The unit is equipped with a safety rope divider designed to eliminate fouling of the catline.

In addition, American Iron is showing its flash-welded, straight-grip and Amweld tool joints plus slush-pump valves and seats along with releasing and circulating overshots.



American Iron & Machine Works Co.'s Universal friction breakout cathead.

American Locomotive Co.
Dunkirk, N. Y.
26 Park Lane

In attendance

W. E. BELINE, CHARLES BYRNE, MARTIN ETTINGTON, P. W. GEISLER, S. KOPP, E. N. SIEDER, Alco Products Division; E. N. COOLEY, D. J. DUFFIN, American Locomotive Co.; A. L. FONTAINE, C. H. HOMER, A. T. LAWRANCE, Beaumont Iron Works; THEODORE GUPTON, J. W. LINFORD, R. H. WESTON, Diesel Engine Division; W. T. STEWART, CHARLES WEIGHARD, Power Machinery Co.

Three different organizations, American Locomotive Co., Beaumont Iron Works Co., Alco Products Division are cooperating in this exhibit. Featured are photographs and literature covering products of this group. A complete line of B.I.W. equipment, Atlas valves, new tank shutoff control, are among the items for drilling and production.

For refineries, Alco's heat exchangers, pressure vessels, fractionating towers, storage vessels are represented. Alco equipment for pipe-line operations include gas-turbine regenerators and Aircoolers.

In addition to its current line of standardized diesel engines, Alco is featuring, with emphasis on pipe-line pumping applications, a new 9 by $10^1/_2$ engine for stationary and portable service.

The exhibit highlights a heat-exchanger servicing center at Beaumont, which operates on a 24-hour, 7-day-a-week basis to repair, rebuild, and remodel heat exchangers and related vessels for the refinery industry.

American Kloeckner-Moeller Corp.
Tulsa, Okla.
70N-71N North Area

American Meter Co., Inc.
Erie, Pa.
45-46 and 57-58 Scientific and Technical Building

For information on equipment and personnel in attendance at this exhibit, see Westcott & Gries, Inc.

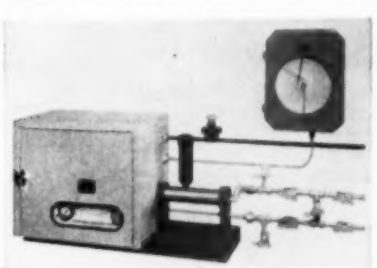
American Recording Chart Co.
Los Angeles, Calif.
179-180 Oklahoma Building

In attendance

J. W. DUNN, SR., W. R. GAY, J. W. DUNN, JR.

Four of American Recording Chart Co.'s instruments are being shown in actual operation. One of the instruments is an Arcco-Anubis, recording liquid gravitometer, another is an indicating-transmitting liquid gravitometer, a third is a recording-controlling liquid gravitometer, and the fourth is a recording-transmitting gas gravitometer.

Other products on display, but not in operation, are indicating-controlling liquid gravitometer, recording-transmitting liquid gravitometer, recording gas gravitometer, laboratory gas balance, portable gas balance, charts, chart drives, and pens.



Arcco-Anubis, indicating-transmitting liquid gravitometer.

I.P.E. EXHIBIT DIRECTORY

American Roller Bearing Co.
Pittsburgh, Pa.
20-21 Silver Lane

In attendance
W. G. SUCCOP, C. L. KNAAK

Bearings which are used principally in oil-field drilling equipment, such as crown blocks, traveling blocks, rotaries, swivels, cat heads, draw works, transmissions, compounding units, and other items, comprise this exhibit.

American Roller Bearing Co.'s display includes its roller-thrust, radial-bronze, and cage bearings, plus straight-roller, stamped-steel cage along with single and double-row, nonskew needle bearings.

American Sand-Banum Co., Inc.
New York, N. Y.
53 California Building

In attendance
L. BRANDIE

This company is exhibiting a line of products for water treating, a fuel-oil additive, and a special lubricant and corrosion inhibitor. The materials for water treating are applicable to the cooling systems of oil-field engines for both open and closed-type circulation. Similar in application is a material for boilers. All of the products are nontoxic.

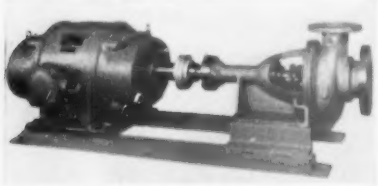
American Telephone & Telegraph Co.
Long Lines Department
Block 206
(See Southwestern Bell Telephone Co.)

Ampco Metal, Inc.
Milwaukee, Wis.
32-34 California Building

In attendance
N. A. DOOLITTLE, O. B. FROHMAN, J. P. HENRY, S. C. LAWSON, I. S. LEVINSON, J. P. MARISCHEN, R. E. NOWICKI, R. J. SEVERSON, W. W. SWAN, E. E. WHITSON.

At this exhibit Ampco metal (aluminum bronze) in its various forms and as finished products is on display. A working scale model of an oil-field pump jack shows an Ampco polished rod under service. Other samples of extruded rod and simple shapes as well as seamless pipe and tubing of varying diameters are on display. Also shown are samples of Ampco sheet and plate, plus seamless and forged Ampco pipe fittings.

The company's pedestal-type centrifugal pump, made completely of Ampco alloys, is featured along with Ampco plug cocks and a large Ampco-Alloy gate valve. Other products shown are Ampco-Trode arc-welding electrodes, representative weldment samples, Ampco spark-resistant safety tools and Ampco metal seal rings.



Ampco's pedestal-type centrifugal pump.

Anchor Coupling Co., Inc.
Libertyville, Ill.
69 Texas Building

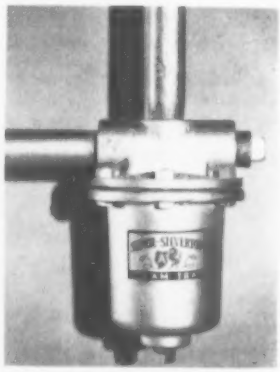
In attendance
ROBERT G. FOX, J. DAVID LUEBKEMAN

This company is displaying a complete line of reusable hose couplings, hose assemblies, and related fittings developed for oil drilling, producing and refining, and liquefied petroleum gas industries. Featured is a new female swivel reusable coupling with J.I.C. threads for the one-wire braid, cotton-cover hose. Male and female reusable couplings on display will have various combinations of N.P.T.F. pipe threads, J.I.C. and S.A.E. threads.

V. D. Anderson, Purifier Division
Cleveland, Ohio
87N North Area

In attendance
WILLIAM J. GLEASON, JR., MICHAEL J. TOTH

Featured are large working models of steam traps and purifiers. The exhibit also includes three types of air-venting steam traps and a line of purifiers for the oil industry. Both items are for use in operations handling live and exhaust steam, oil vapors, gases, and compressed air.



Super-Silvertop steam trap.

Ansul Chemical Co.
Fire Equipment Division
Marinette, Wis.
24 Silver Lane

In attendance
C. H. ARMSTRONG, THOMAS GORMAN, ROBERT BREWER, ROGER ALLEN, FRED RASMUSSEN, VIRGIL W. MURRY, NEAL ENGBERG, J. C. MORGAN, L. C. McKESSON, P. R. LARIMER, K. B. COVERT.

Ansul Chemical Co. is showing four models of dry-chemical fire-fighting equipment and a special extinguisher for putting out metal fires. On display are 4, 20, and 30-lb. hand extinguishers and Ansul's 150-lb. wheeled extinguisher. The special unit is designed for use on magnesium, sodium, potassium and other light metal fires.

Fire technicians examine pan of sodium after put out. Oxygen masks protect fire fighters from dangerous sodium fumes.

Armco Drainage & Metal Products, Inc.
Middletown, Ohio
East of Block R

In attendance
T. H. BELL, R. C. BEAM, M. BAILEY, R. MERRILL, J. HISKEY, T. ROWAN, W. GAMMON, E. H. HOLLAND, T. NEIBLING, W. BREIEL, L. AGEE, S. R. IVES, R. E. BARNARD, L. S. SHEALY.

A standard Steelox building houses this exhibit along with Armco Steel Corp., Armco International Corp., Sheffield Steel Corp., and Armco Drainage & Metal Products, Inc. Shown are two long lengths of Armco spiral welded pipe, one of surface casing and the other line pipe. Also used as conduit for road crossings, and foundation piling. A group of other products are also included in the exhibit.

Armco International Corp.
Middletown, Ohio
East of Block R

In attendance
S. M. GROSS, C. LAVENAS

This company, a subsidiary of Armco Steel Corp., shares its exhibit with the parent company and two other subsidiaries, Armco Drainage & Metal Products, Inc., and Sheffield Steel Corp. Among the products exhibited are special nestable culvert and Pipe-Arch.

Armco Steel Corp.,
Middletown, Ohio
East of Block R

In attendance
G. H. KLOUMAN, R. G. SLOAN, R. L. WELLS, C. L. COLEMAN, W. C. LEIGH, JR., P. L. WEINMAN, J. W. SCHOFIELD, A. D. SECHRIST, S. P. WATKINS, W. H. SPINDLER, R. K. LEEDOM.

Featured at this exhibit is an exhaust-stack rain shield constructed of Armco aluminized steel. A section of this rain shield is being shown. Other products on display are stainless-steel relief valves, polished rods, bull plugs, shot-hole anchor, tower lining, down-the-hole pump parts, perforated well screens, well-head equipment, pipe-line orifice plates, all of stainless steel. Also displayed are mechanical steel tubing for shot hole casing, and Armco Zincgrip steel tubing for handrails in refineries and tank farms.

Armstrong Machine Works
Three Rivers, Mich.
32 Texas Building

In attendance
O. E. ULRICH, JR., T. M. REED

This company is exhibiting a glass model of its inverted-bucket steam trap, operating under 7-psi. steam pressure to show its cycle of operation. The self-scrubbing action and the actual handling of air or noncondensable gases may also be observed.

Also shown are models of Armstrong air traps and dual gravity traps or drainers.

Associated Publishers, Inc.
Dallas, Tex.
3 and 256 Oklahoma Building

Athey Products Corp.
Peoria, Ill.
Block C
(See Caterpillar Tractor Co.)

Autocar Sales & Service Co.
Dallas, Tex.
Block 204A

In attendance
G. M. WILKINS, W. L. GOOGINS, MIKE DOOLEY, SI FORNEY

A heavy-duty, oil-field, tandem unit is being

an **ACCO** product

"PRICE" and "COST" Are Two Different Things

• The price you pay for a drilling line is no indicator of what it will cost you to use it. Some operators buy on a price basis because the original amount seems smaller. Others buy a shorter length line to keep the price down. Both of these methods of buying have cost many operators a lot of extra money. With equipment costs rising and competition keener than ever, you must find ways to cut costs.

Wire Rope Is Only Part of It

Of course, it pays to use the one best drilling line—American Cable's TRU-LAY Preformed. But that's only part of it. You must also follow certain practices that start when you order and carry through until you have run every last ton-mile from the line. The beauty of the whole plan is its simplicity and easy operation.

You Can't Afford to Pass It Up

Your nearby American Cable distributor will tell you why one of the two reels illustrated above is better for you—AND—he'll show you how you can *make it cost less*. It won't cost you anything to find out, so why wait. See him today or write our Wilkes-Barre office.

ACCO **See us at Booth 173 • Tulsa Oil Show**

AMERICAN CABLE DIVISION
AMERICAN CHAIN & CABLE

TRADE MARK

Wilkes-Barre, Pa., Chicago, Denver, Houston, Los Angeles, New York, Odessa, Tex., Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

makers of ACCO Registered WIRE ROPE SLINGS

RENEWED On location IN LESS TIME!

ENGINEERED FOR Easy ACCESS

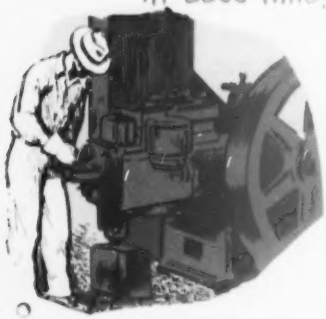
The unique design and engineering of CSCO Pumping Engines makes possible *complete* renewing* on location . . . and in less time.

It is not necessary to remove a CSCO for a machining operation. Because of the easy access of all CSCO assemblies and parts, all work may be done right on the location. Thus you save both hauling expense and the time required for dismounting.

This is another important reason why a CSCO Pumping Engine is the most economical — the most dependable for maximum service — you can have on your pumping unit.

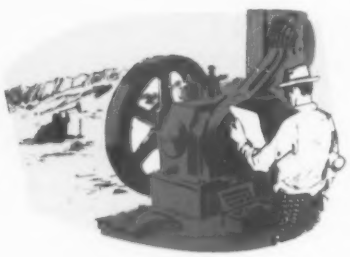
**CSCO Engines are actually renewable as distinguished from rebuilding or overhauling. Every CSCO part is replacable — without a machining operation.*

COMPLETE INSTRUCTIONS — A highly illustrated Instruction and Parts Book enables the operator to make all mechanical repairs, with correct parts . . . on location in Less Time!



GRIND VALVES — Cylinder head is removed quickly; no oil tubes to disconnect; intake and exhaust manifolds removed by four accessible nuts. On location renewal in Less Time!

RENEW SLEEVE GASKET — A simple wooden block takes place of a special pulling tool. Replaced on location in Less Time!



REPAIR GOVERNOR—Because of easy access, governor may be exchanged as quickly as a magneto . . . the complete operation in Less Time!

Now! **STARTERS FOR CSCO PUMPING ENGINES**

Designed especially for CSCO Engines . . . all models . . . Air Cooled Engine or Battery Motor. Call or write for complete information.

See Our Exhibit
OIL SHOW
TULSA MAY 14-23

CSCO

PUMPING ENGINES

The C-46 *The* C-66 *The* C-96

CONTINENTAL

SERVING THE OIL AND GAS INDUSTRIES

THE CONTINENTAL SUPPLY COMPANY

General Offices: DALLAS, TEXAS

Representatives in All Principal Oil Fields of the World

shown. This Autocar is equipped with a 200-hp. diesel engine and is completely rigged for oil-field operations with equipment built by Downs-Clark Equipment Co.

Other Autocar exhibits include a 10-wheel, 207-hp., tractor unit for oil-field operations; a 200-in.-wheel-base, oil-field, rig-up unit, also powered with a 207-hp. V-8 engine; an over-the-road tractor driven by a 175-hp. diesel and another over-the-road tractor powered with a 207-hp. V-8 engine.

Autocar's 207-hp. heavy-duty unit.

Axelson Manufacturing Co.
Division of Pressed Steel Car Co.
Los Angeles, Calif.
Block 14

In attendance

J. C. AXELSON, J. R. WALKER, V. MANCUSO, KEN RAMEY, W. F. GOERTZ, JOHN READ, P. S. BLOUDOFF, CLAYTON POOL, F. S. CUMMINGS, Axelson Manufacturing Co. Division; JOHN I. SNYDER, W. F. WILMAS, C. F. DAVIS, C. J. PLISKY, W. W. GREENWAY, JOHN D. SMALL, Pressed Steel Car Co.

This company has in operation one of its long-stroke hydraulic pumping units at its Block 14 location. A complete display of all Axelson's deep-well plunger pumps and related parts are being shown at the Jones & Laughlin location.

Baash-Ross Tool Co.
Los Angeles, Calif.
24-26 Texas Building

In attendance

L. F. BAASH, F. L. TOOLEY, H. C. ROSS, A. F. BROWN, G. D. JOHNSON, T. A. BOYD, O. A. BROWN, LEO CYPHER, W. J. WILLIAMS, E. M. GEARKE, LEE J. LAIRD, H. L. MESSINGER, J. L. DICKMANN, L. L. GARREN, J. L. BARNETT, H. C. MAYS, C. E. LAWS, G. B. COOK, H. Z. BROWNING, C. M. LAUDERMIL, K. E. JONES, H. WOTKYNS, R. L. LEBUS, W. P. POUND, THOMAS RAY, JR., ROBERT PRITCHARD, HARRY SEIGLEY, W. H. WALLACE, R. L. BOWCUTT, K. S. ROSS.

Baash-Ross is featuring a diversified line of drilling, production, and fishing tools, with particular emphasis on the most recent of its developments, including a pressure-welding machine, "PB" quick-change production blocks, "UPS" casing and landing heads, and "DBM" multiplex blocks.

The Baash-Ross pressure welder permits welding together such thick-walled tubular products as drill collars, kellies, subs, and similar equipment. By a controlled combination of heat and pressure, such welds are achieved without adding any new metal and without changing structure of the metal being welded. Films are shown of the process in operation, as well as typical examples of pressure-welded products.

The "PB" block can be quickly converted to one or two-sheave operation without re-stringing lines or making any changes in the rig hookup. It combines the speed of single-sheave operations with the added lift of two-sheave hookups.

Baash-Ross "UPS" casing and landing heads a recent development for low and

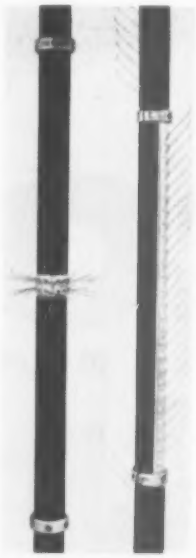
Baash-Ross "DBM" multiplex traveling block.

medium-pressure wells, have a unitized packer and slip unit that simply wraps around the casing and is lowered into position in the bowl of the head. Since the packing unit is part of the slip assembly, no holddown equipment is required.

The Ross "DBM" multiplex blocks feature streamlined pockets into which lead can be placed to increase the weight of the blocks whenever desired. Also, they have a unitized hook-and-elevator link connector that combines the utility of several connectors into one.

B and W Incorporated
Houston, Texas
2-3 Park Lane

A new, open-hole-plugging assembly, which permits derrick-floor installation of various types, B. and W, Inc., scratchers and split, button-type clamps is being shown at this exhibit. The special plugging assembly covers six 30-ft. singles of drill pipe or tubing. B and W, Inc., is also displaying several other products including its gravel-packing equipment.



B and W Scratcher

Baker Oil Tools, Inc.
Los Angeles, Calif.
99-102 and 111-112 Oklahoma Building

Three tools are being featured. One of these is differential fill-up shoes and collars, new devices designed to facilitate the running of casing, and in addition to provide the advantages of Baker floating equipment, including the action of a back-pressure valve for cementing. A new tubing centralizer incorporates an improved spring design, plus convenience of installation and it is arranged for installing around a coupling on either plain end or upset tubing as it is run in the well. The new Baker scratcher features a scratcher-wire design and mounting principle.

Baker Oil Tools wall scratcher.

Baldwin-Duckworth
Division of Chain Belt Co.
Springfield, Mass.
99-100 and 111-112 Texas Building
(See Chain Belt Co.)

Ball Distributing & Engineering Co.
Tulsa, Okla.
28 Silver Lane

Band-It Co.
Denver, Colo.
79 Oklahoma Building

In attendance

EDWARD B. EVANS.

This company is displaying its complete line of products which include Band-It clamps, Band-It Jr. clamps, and Band-It hose nipples in all sizes.

Band-It Co.'s hose clamp.

Barnes Manufacturing Co.
Mansfield, Ohio
6-7 Park Lane

In attendance

F. B. HOUT, S. W. MEEHAN, A. BECKER, JOE HAMES, STANLEY D. BOWLES.

Makers of a line of pumps for the petro-

Now! STARTERS FOR CSCO PUMPING ENGINES

AIR COOLED ENGINE OR BATTERY MOTOR
ALL MODELS . . . C-46 . . . C-66 . . . C-96

CSCO Pumping Engines have been noted for being easy to start. Now, with the new CSCO Starter, it is even easier to start a CSCO.

This is not just a starting attachment adapted for use on the CSCO — it is *especially designed* for all CSCO models; with either air cooled engine or battery motor.

Here are a few of the features engineered in this latest addition to the CSCO Pumping Engine line:

POSITIVE FRICTION DRIVE . . .
No slippage

SELF-DISENGAGING . . .
No overspeeding

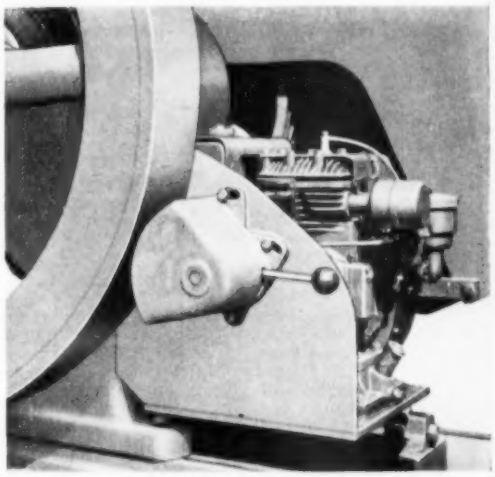
NO FOOT PEDAL . . .
Controlled friction wheel pressure

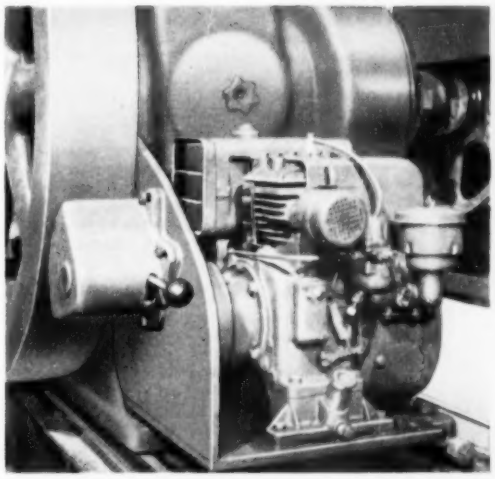
NO FOUNDATION . . .
Low installation cost

DIRECTLY ATTACHED . . .
Shifts with the engine

ESPECIALLY DESIGNED FOR CSCO ENGINES . . .
Not a make-shift

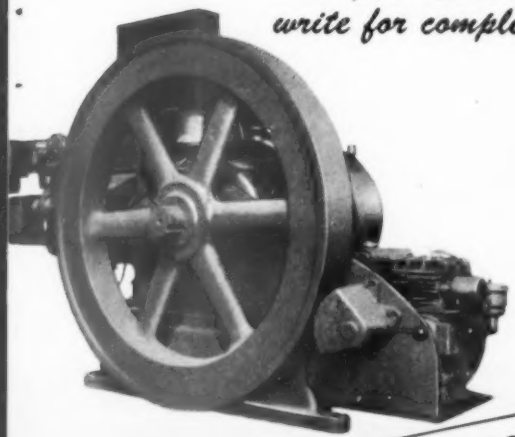
ACCESSIBLE . . .
Easy to maintain and service





Battery motor may be substituted for air cooled engine

Ask your Continental Store or write for complete information.



See Our Exhibit
OIL SHOW
TULSA MAY 14-23

THE CONTINENTAL SUPPLY CO.
General Offices: DALLAS, TEXAS
Representatives in all Principal Oil Fields of the World

CONTINENTAL
SERVING THE OIL AND GAS INDUSTRIES

Welcome

TULSA IS A GREAT CITY . . .

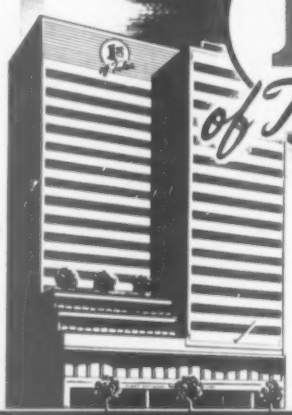
Where most people . . .

THINK FIRST!

Since 1895, more and more people in Tulsa and the Oil Industry "Think . . . FIRST". There must be a reason. In serving the public, we believe in — and have tried to use — the *third* ingredient . . . Head, AND Heart. We believe that is the main reason why we've been able to build one of the great banks of the southwest. Banking at First of Tulsa is a friendly, helpful experience. We hope when in Tulsa you'll join the thousands who will visit our new building, and learn for yourself why, in Tulsa, it's both pleasant and profitable to "Think . . . FIRST".

Visit our "Dog House" at the INTERNATIONAL PETROLEUM EXPOSITION

The first spot left of the main gate . . . there you'll find comfortable chairs, a bulletin board, and friendly page girls will help you find people or places on the exposition grounds. *And* . . . it's the only spot in the show where there are TELEPHONES FOR OUTGOING OR INCOMING CALLS. Think . . . FIRST, and stop in, won't you?



ONE OF THE SIGHTS OF THE CITY is the nationally publicized "Birth of Oklahoma". The $25,000 prize winning mural in the First of Tulsa Main Lobby. Don't miss it while you're in Tulsa.

Member Federal Deposit Insurance Corp.

THE FIRST
NATIONAL BANK
AND TRUST COMPANY
OF TULSA

leum industry, this company is displaying its self-priming centrifugal units along with other pipe-line transportation equipment.

Baroid Sales Division
National Lead Co.
Houston, Tex.
83-84, 127-128 Oklahoma Building and Block 8

In attendance

GEORGE L. RATCLIFFE, G. B. COALE, AMOS A. ROBERTS, J. W. BEANE, H. J. BLYTHE, W. B. BOUTWELL, E. C. BUFFINGTON, J. M. BUGBEE, JR., H. I. BUSSA, F. A. CHRISTANELLI, A. C. CRAMER, M. C. DALY, J. J. DOYLE, R. J. DURAN, J. J. EDWARDS, F. M. ESTEP, A. E. FITZMORRIS, J. B. HEAD, W. L. HEATER, J. W. HOOD, L. W. HUEBEL, L. W. JONES, W. C. KELLOGG, K. K. LITMAN, H. C. LOEHR, JR., E. W. LOUDEN, A. B. McDANIEL, E. L. MOHR, D. J. MURPHY, P. A. NEWTON, F. E. PALMER, L. A. SISK, D. D. VARNELL, F. B. VICK, S. D. WIGINTON, JR., H. H. FARNHAM, G. R. GRAY, R. E. OFFEMAN, R. W. WILSON, K. E. BARLEY, W. G. BEALMEAR, F. J. BEESLEY, B. L. BOCCELLA, L. R. CHOATE, S. E. FOUTS, S. E. GEFFEN, A. B. LANE, J. W. MALTBY, W. H. RUSSELL, A. W. SHORT, R. E. SOUTHER, J. L. YATES, D. T. FOWLER, E. R. ANDERSON.

Baroid has on exhibit a complete display of mud-testing equipment, both old and new, and a scale working-model drilling rig. Colored slides of the most modern mud engineering facilities are also being shown.

The 8-ft.-tall working-model drilling rig is actually drilling through a simulated formation. The model is exact in every detail, even to a circulating mud system and shaker.

Beaumont Cement Sales Co.
Tulsa, Okla.
Block 115

In attendance

W. W. CARSON, CHARLES STEPHENS, CALVIN ORTEGO, P. J. LA TOUR, CLIFF MOORE, E. C. SMITHERS, W. R. ZIMMERMAN, CARL BRAZELL.

(See Mud Products, Inc.)

Beaumont Iron Works
Beaumont, Tex.
26 Park Lane

In attendance

A. L. FONTAINE, C. H. HOMER, A. T. LAWRANCE.

In addition to its line of drilling and production equipment, Beaumont Iron Works is featuring its service for refinery equipment. This company maintains facilities for repairing, rebuilding, and remodeling heat exchangers and related equipment.

Beech Aircraft Corp.
Wichita, Kans.
Block 123

In attendance

O. A. BEECH, JOHN P. GATY, FRANK HEDRICK, LUCILLE WINTERS, LEDDY L. GREEVER, V. L. GASTON, MARVIN B. SMALL, G. A. RAINES, W. F. BALZERICK, RICHARD H. SCHOWALTER.

Beechcraft model D18S, all-metal twin-engine executive transport.

Beech Aircraft is showing a twin-engine Model 18 Beechcraft at its location in Block 123, and a Twin-Bonanza along with a Bonanza in front of the administration building at the airport. In addition, Beech Aircraft is displaying the insignia of some of the oil companies owning Beechcraft planes, at its exhibit in Block 123.

Belgian Electric Sales Corp.
New York, N. Y.
49 California Building

In attendance

HAROLD F. LEAVITT

Displayed are electric motors manufactured in Belgium. The motors are explosionproof, totally enclosed, fan-cooled, and open dripproof units. Also shown are vertical hollow-shaft and solid-shaft pump motors.

Bendix Aviation Corp.
New York, N. Y.
207 Oklahoma Building

In attendance

DR. HARNER SELVIDGE, GEORGE ROSENBLIT, OSCAR HAUG.

Bendix is giving a live demonstration of its Ultra-Viscoson which instantaneously and continuously measures viscosity of a fluid. The demonstration includes viscosity measurement of various oils, drilling muds, and other petroleum-industry fluids. Containing no moving parts, the instrument consists of a small sensing element, or probe, and an electronic computer. The probe is designed for permanent installation in a pipe line, fractionating tower, or other processing vessel. Lube oils can be blended using the Ultra-Viscoson and it may be installed for controlling processing operations.

Berry Division, Oliver Iron & Steel Corp.
Pittsburgh, Pa.
Block 207
(See Fluid Power Corp.)

Bethlehem Supply Co.
Subsidiary of Bethlehem Steel Corp.
Tulsa, Okla.
Block 9

In attendance

J. V. SPALDING, W. J. BRADY, F. R. HOUSE, J. C. KNOLL, O. H. CROWE, W. T. DAVIS, J. B. ELLZEY, J. G. FLOYD, T. C. GRAHAM, R. A. JOHNSON, W. A. LAREW, E. S. LEWIS, G. B. SAGER, W. F. STEPHENSON, H. S. SUTTON, ARTHUR WEBER, JR., GUY BROWN, JR., JOE CHASTAIN, J. K. DAVIS, GUY O. DENTON, R. H. GAULT, M. R. GRIFFITH, P. H. JEZZARD, C. E. MEDLEY, AUSTIN MOORE, J. K. NELSON, D. G. RHOADES, L. F. RITCHIE, J. L. SHAFER, H. E. REDDEN, J. W. JILLSON, D. C. THOMAS, R. A. BLAIR, R. R. BUCKLE, R. D. PFOLSGROF, W. J. VARK, J. R. B. FREEMAN, J. C. GRAVES, JR., M. A. KLEPFER, L. R. ESTES, S. D. GOINS, P. J. RASH, C. L. GOURLY, E. WALKER, C. W. DUNN, E. A. BUXTON, N. R. DOWNIE, O. W. JOHNSON, R. F. HURST, E. H. GUMBART, R. E. BURNS, B. C. McGREGOR, H. M. FLYNN, H. H. FULLER, E. C. RECTIN, H. MARLOW, L. H. WINKLER, A. P. SPOONER, J. S. WORTH, W. J. PEARSON, T. H. GIBBS, ROBERT GRUVER, ANDREW SCHWARTZ, L. C. LEPREHON, CHARLES HAAS, J. A. THACKER, R. S. BARNES, W. R. STEVENS, O. E. BERG, G. L. LASCHOBER, JR., L. C. TORRELL, F. E. TUXWORTH, W. C. MADISON, W. W. JOHNSON, K. C. WINSTON, V. R. BLACKWELL, B. G. RAMAGE, V. N. CASTNER, W. B. HOUSE, RAY LACY, V. D. GRETH, T. J. FITZGIBBONS, D. F. TAYLOR, T. W. THURMOND, JR., A. A. WARG.

Bethlehem is exhibiting a wide variety of oil-industry equipment. On display is the company's large-diameter-drum draw works which has a demountable countershaft assembly (over-all width 8 ft. for hauling). Shown also is an upper-drum assembly for replacing the catshaft assembly.

A heavy-duty compound is being shown equipped with transmission, three slow-speed gas-butane engines, Twin Disc hydraulic torque converters, Fawick disconnect clutches between compound and torque converters, and two pump drives using Bethlehem air friction clutches. An underflow rotary drive powered with a gas-butane engine, and pumps which have oil-bath power ends, all-steel heavy-duty fluid ends for V-belt drive from the compound, are other items exhibited.

Another item on display is an independently driven mud-mixing pump powered with gas-butane engine driving through a hydraulic torque conveyer. This unit is circulating clear water under simulated drilling conditions. Still another engine-powered pump is being shown. This unit is for pipe-line service.

A Lee C. Moore 142-ft. cantilever mast mounted on 10-ft.-high substructure is included in Bethlehem's display as is a 144-in.-maximum-stroke Bethlehem pumping unit powered with a 25-hp. Fieldmaster motor. Walking-beam capacity of this unit is 37,100 lb. Powered with a 15-hp. Fieldmaster motor, another Bethlehem pumping unit is built with the motor under the samson post, eliminating the power extension base at the rear of the unit. A third and the smallest of Bethlehem's pumping units is powered with a Fairbanks-Morse engine. An Ajax 4-in. Triplex pump is displayed direct connected to an Ajax engine. This Ajax engine is a new model with directional porting and gas injection.

To demonstrate the lubrication system of one of its gear reducers, Bethlehem is showing a motor-driven unit equipped with a plexiglass cover. An adjustable counterbalance, a mockup of one of Bethlehem's 42-in. pumping units, is also being displayed along with a complete working model of a Bethlehem pumping unit as built by Joe Chatham, of Bethlehem's Tulsa plant.

A special picture display shows Bethlehem's secondary-recovery services. An Infilco water filter for water-flooding plants is being shown with a plexiglass strip in the side of the filter shell to show the layers of filter media.

A Gardner-Denver completely-unitized gas-compressor unit, driven by a new model LeRoi gas engine, is among the larger items at Bethlehem's exhibit. This skid-mounted unit has a capacity rating to 2½ million cubic feet per day.

Bettis Corp.
Houston, Tex.
60-61 Scientific and Technical Building

In attendance

JOHN M. SHEESLEY, W. N. BITTERMAN, W. N. WILKERSON, J. I. SCHWERN, ED F. OSBORNE, O. H. LANDRETH.

Exhibited are Igloo water coolers, Velan universal steam traps, Spiral-Glas fiber-glass-reinforced plastic pipe. Featured is the new Bettis Safti-Block, a device which warns driller of overtravel of traveling block to prevent running through crown block. This unit is hooked to the water head of the draw works and a warning mechanism may be arranged to blow a whistle, set the brake on draw works, or close the engine throttle.

I.P.E. EXHIBIT DIRECTORY

I.P.E. EXHIBIT DIRECTORY

Bettis Rubber Co.
Los Angeles, Calif.
1 Park Lane

New hydraulic equipment for installing protectors on drill pipe is displayed. The protectors are designed so that they can be installed while pipe is on the rack, while it is suspended in the derrick, or while going into the hole. The equipment is readily portable and can be quickly set up anywhere.

Bettis is also showing its drill-pipe protectors, pipe wipers, slush-pump rod packing, and stuffing-box rod packing. Bettis products are also displayed by Bethlehem Supply Co. and Mid-Continent Supply Co.

Bettis Rubber Co.'s dual pipe wiper.

Bignall & Keeler Division, John Ramming Machine Co.
St. Louis, Mo.
12-13 Park Lane

In attendance
R. J. RAMMING, W. A. RAMMING, JR., GEORGE L. MOORMAN

This company is exhibiting one of its Bignall-Keeler pipe-threading machines. The No. 6B Duplex machine on display is equipped with an air-power chuck which simplifies operation and insures firmly held pipe for cutting. Over-all design of the machine provides the ruggedness necessary for oil-field operations.

Black & Decker Manufacturing Co.
Towson, Md.
38-39 Texas Building

This company is showing its line of products for construction, installation, assembly, and maintenance of equipment in all phases of the petroleum industry. Included in the showing are portable electric drills, grinders, sanders, saws, hammers, valve-reconditioning equipment, plus accessories and attachments.

Black, Sivalls & Bryson, Inc.
Kansas City, Mo.
39-43 and 62-66 California Building

In attendance
KENNETH W. LINEBERRY, HENRY A. RUYSSER, JR., FLOYD C. MYERS, LAWTON LAURENCE, JIMMY DVORACEK, BILL WILLIAMS, RALPH STEVENS, PAUL BARTLEY, RICHARD CWIK, VERNE PALMER, RALPH NICHOLS, ED BYERS, R. J. SIVALLS, DEE UNSELL, LEE KELTON, ED POOL, ED REIF, EARL DARR, TOM McGUIRE, BILL McGINNIS, JIMMY SIMMONS, TOM CASEY, JOHN WILLIAMS, JOE R. CAMPBELL, L. P. WOODSIDE, HAROLD BRUNER, GLENN BRADFORD, L. B. CUTCHALL, GUY BORDEN, JOHN E. WALKER, MAC W. MILLER, L. E. JONES, BILL BOURNE, PAUL BOWLES, EMEREE ALLEE, BILL HAYES, LEE LUTKE, JOHN CROSS, WICK SKINNER, JOHN CAMPBELL.

This company is featuring its entire line of oil and gas field processing equipment. Special emphasis is being given low-temperature separation and emulsion-treating equipment. Sharing the spotlight with dehydration, treating, separating, heating, and storage equipment, Climax automatic controls and B.S.&B. safety heads are on display.

A special tour through B.S.&B.'s Tulsa plant is being conducted. Climax diaphragm control valves, controllers, and regulators are manufactured at this plant. Oil and gas field processing equipment is also on display at the Tulsa plant. Transportation is available from B.S.&B.'s booth.

Bomud Co.
Tulsa, Okla.
Block 115

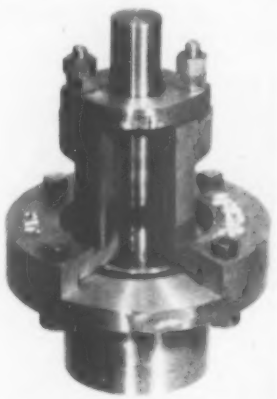
In attendance
WARREN MILLER, R. J. REED, V. S. KELLER, P. J. POWELL, KEMPER E. HIPPLE, BOB SNYDER, HAROLD TOMLIN.

(See Mud Products, Inc.)

Bos.-Co. Equipment Engineering & Manufacturing
Tulsa, Okla.
Block 208

In attendance
LEROY T. BOSSARD, RALPH RHODES

New developments in petroleum production equipment are highlighted at this exhibit. A new friction-type starter for horizontal engines, featuring a rubber-covered QD friction pulley is being shown. In addition a new polished-rod stuffing box which is self-aligning and self-lubricating is displayed. This stuffing box features an O-ring joint which permits ¾-in. horizontal movement in any direction, Teflon packing, and an oil reservoir. Also shown are a new universal pipe anchor, a T-slot rail for tying down a battery of pipe, a new oil-field tool, the Handi Cathead Wincher, for lifting or pulling jobs that are too heavy for one or two men to handle, a new self-cleaning rotary strainer which continuously removes dirt without shutting off the flow of fluid.



Bos.-Co. polished-rod stuffing box.

Bovaird & Seyfang Manufacturing Co.
Bradford, Pa.
Block 11

Bovaird Supply Co.
Tulsa, Okla.
Block 1

In attendance
D. D. BOVAIRD, F. D. BOVAIRD, R. G. AYERS, R. E. BATCHELOR, R. M. McMAHAN, J. H. TROWER, W. J. BOVAIRD, J. R. KENNEDY, C. E. PEARSON, F. J. ROBBINS, R. W. ROBBINS, R. E. WHITTEN, GENTRY ADAMS, E. R. CHASTAIN, L. A. DAVIS, D. W. DUNN, R. F. EWING, LYLE GALBRAITH, J. E. GOODELL, J. B. HUBBARD, W. F. McILVAIN, T. B. PIERSON, B. D. PRICE, W. F. ROBERTSON, F. H. RUDRAUFF, CLYDE STAPLETON, J. B. VAUGHAN, J. W. YOUNGLING, HUGH HALE, R. J. HALL, JAMES KIKER, T. A. MALLISEE.

Bovaird's exhibit incorporates facilities for the convenience, comfort, and relaxation of visitors. Conference, telephone, and rest rooms are available and all of Bovaird's key personnel are in regular attendance. Among the wide variety of products exhibited are the largest and smallest pumping units and the largest mud pump, all made by Emsco. A new development in the application of hydraulics to blowout preventers, shale shakers, and other pieces of oil-field machinery is on display.

Bowser, Inc.
Fort Wayne, Inc.
22 and 78 Scientific and Technical Building

In attendance
W. M. HARKS, F. S. EHRMAN, W. A. CARTWRIGHT, G. W. COCKE, J. H. NELSON, R. A. BLAND, E. M. MAY, RAY COURTRIGHT.

Bowser is showing a variety of its equipment for liquid-control applications. Displayed are a proportioning unit and cutaway models of the company's Xacto and Rotorol meters along with a demonstrating devices, etc., Duo-Matic pumping unit, and Mag-i-trol plus a Siamese-Twin service-station pump.

Brad Foote Gear Works, Inc.
Cicero, Ill.
6N-7N North Area

In attendance
GUNNAR E. GUNDERSON, E. G. LINDGREN, H. J. BUESCHER, E. C. OVERTON, C. PLIMPTON.

Brad Foote is featuring induction-hardened shafts.

Bradford Companies
Tulsa, Okla.
261-262 Oklahoma Building

In attendance
MORRIS FELL, JACK WOLFE, HAROLD WOLFE.

Display includes Bradline cement-lined pipe and fittings, and Bradco-40 plastic pipe and fittings. Both of these lines are designed especially for application in corrosive oil-field operations.

Shown in addition are Hershey high-pressure water meters, plus Pittsburgh high-pressure water meters and other water-flooding and salt-water-disposal-system equipment.

Braniff International Airways
Dallas, Tex.
North of I.P.E. Office Building

Ralph N. Brodie Co., Inc.
San Leandro, Calif.
54-55 California Building

A complete series of its BiRotor meters for pipe-line service is shown. A capacity range from 170 to 1,800 bbl. per hour, pressures from 125 to 1,000 psi., are covered by 19 basic models.

Brewster Co., Inc.
Shreveport, La.
Block 10

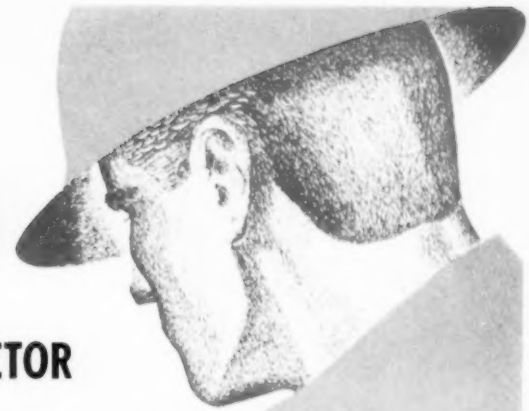
In attendance
HARRY B. MARIONEAUX, P. J. PARKER, J. D. JOHNSON, JERRY PRICE,

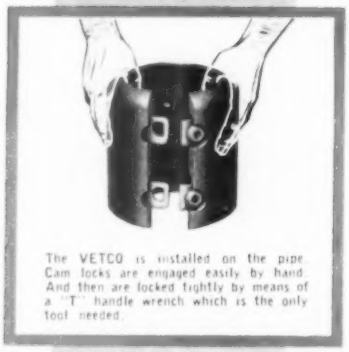
LOCK ON

VETCO

OFF-N-ON

DRILL PIPE AND CASING PROTECTOR





The VETCO is installed on the pipe. Cam locks are engaged easily by hand. And then are locked tightly by means of a "T" handle wrench which is the only tool needed.

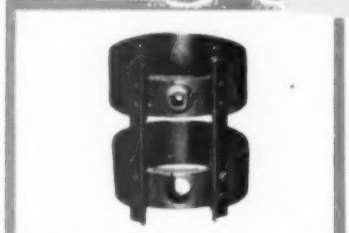
pays for itself in rig time saved...

VETCO Protectors go on and come off fast—8 to 10 seconds. With one quick motion you lock VETCO Protectors on the joint you want. You get complete flexibility and complete control with rubbers on only the joints you want. Your own crew puts Protectors on and off without waiting for a service crew.

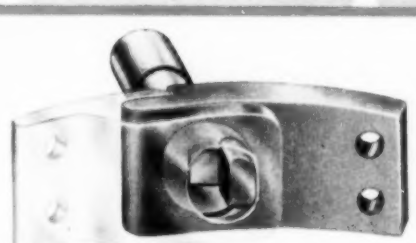
The cam locks the Protector on with a tight grip that won't jar loose, can't slip, and won't move in any way. This cam lock is easy to open and to close; yet it closes with a positive grip that can't work loose. The cam lock is an integral part of the VETCO Protector with nothing to misplace, nothing to drop off in the hole. Frequent changes do not hurt the Protector.

So now with complete freedom you can use pipe progressively throughout the string. The same rubbered pipe is not used at top hole all the time. You no longer need to lay down rubbered pipe while tripping. VETCO Off-N-On Protectors will pay out in rig time saved.

SEE THE VETCO IN TULSA
Oklahoma Building, Booth 191



The alloy steel bands form a strong skeleton to grip the pipe. Rubber is compressed between the metal bands and the pipe for a tight grip which prevents movement of the protector.

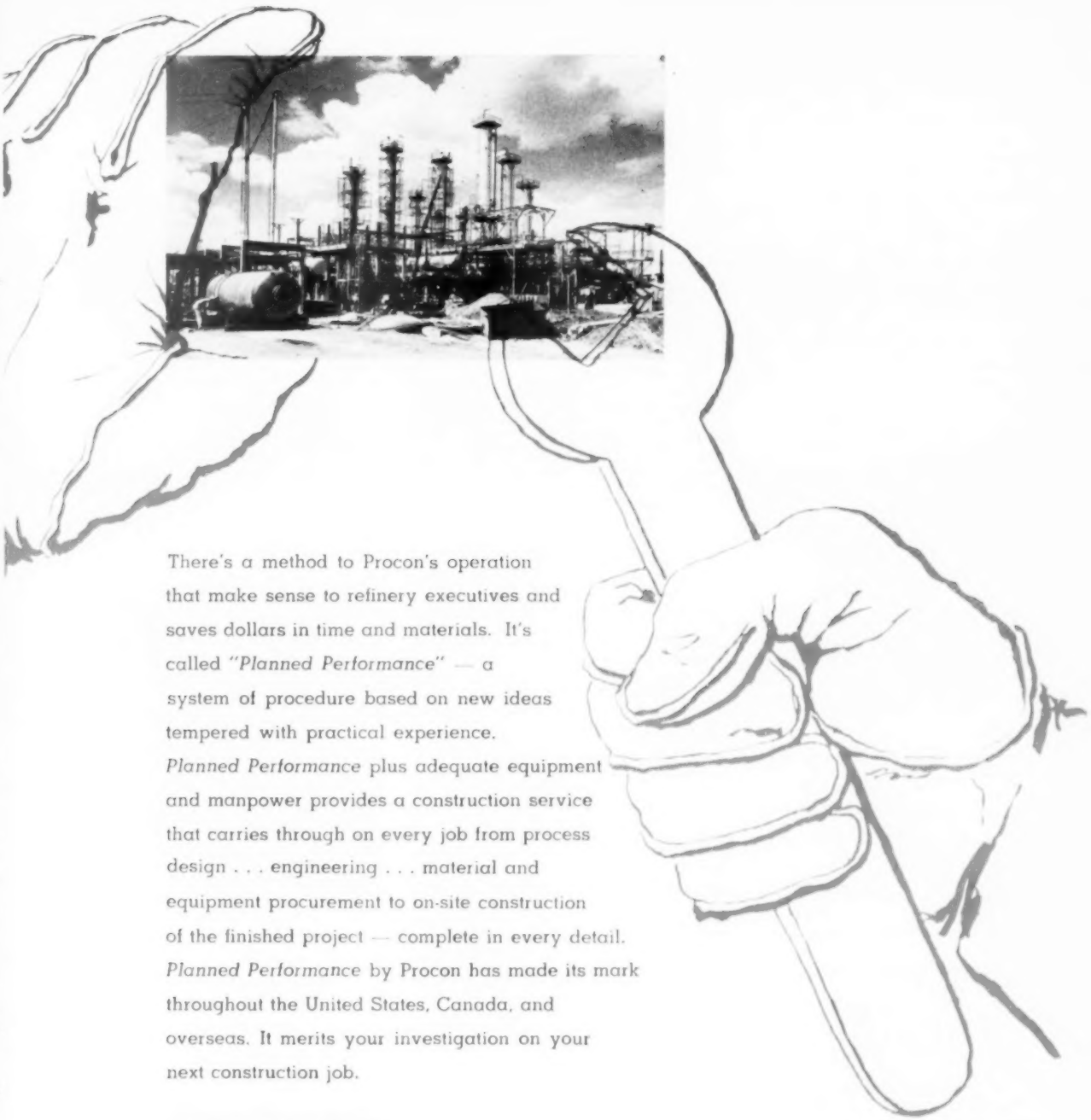


The forged cam lock is built right into the VETCO Protector. Nothing to come loose and fall in the hole. Nothing can loosen the tight lock.

GRIBBIN & BAYLOR

2930 PEASE AVE., HOUSTON, TEXAS — Phone PRestan 8156
324 NORTH VICTORY BLVD., BURBANK, CALIF. — Phone Rockwell 9-2543
507 BRYAN STOCK TRAIL, CASPER, WYOMING — Phone 5942

PLANNED PERFORMANCE



There's a method to Procon's operation that make sense to refinery executives and saves dollars in time and materials. It's called *"Planned Performance"* — a system of procedure based on new ideas tempered with practical experience. *Planned Performance* plus adequate equipment and manpower provides a construction service that carries through on every job from process design . . . engineering . . . material and equipment procurement to on-site construction of the finished project — complete in every detail. *Planned Performance* by Procon has made its mark throughout the United States, Canada, and overseas. It merits your investigation on your next construction job.

PROCON *Incorporated*

PROCESS CONSTRUCTION

1111 MT. PROSPECT ROAD, DES PLAINES, ILL., U. S. A.

IN ENGLAND

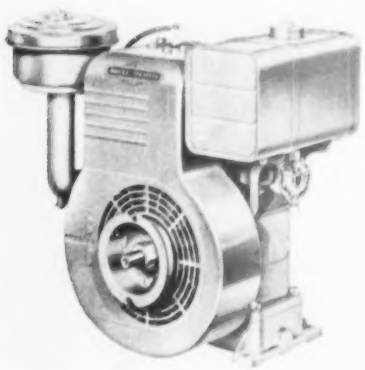
PROCON (*Great Britain*) LIMITED

112 STRAND, LONDON, W. C. 2

CLYDE ROBERSON, ERVIN AUXTER, A. OLIN PRICE, B. E. WILDER, L. C. PARKER, J. D. HARRISON, A. L. CLICK, O. HUTCHINSON, JAMES T. CARMICHAEL, C. E. WOODS, C. R. WILLIAMS, W. H. RAMSDELL, ZACK FORD, R. T. HESTER, ROBERT E. SULLIVAN, K. A. WILLIAMS.

Briggs & Stratton Corp.
Milwaukee, Wis.
36 Oklahoma Building

This company is exhibiting its complete line of engine models commonly used by the oil industry. These single-cylinder, air-cooled engines are adaptable to all types of jobs such as portable lighting plants, mobile work shops, water pumps, and diesel-engine starters. They also serve to power various kinds of portable equipment used by drillers, building contractors, plus pipe line and other contractors.



A typical Briggs & Stratton engine rated at 5.10 hp.

Broderick & Bascom Rope Co.
St. Louis, Mo.
Block 7

In attendance

J. H. BASCOM, J. J. SIEBER, K. B. BRITT, GEORGE T. BORN, L. R. SAUNDERS.

(Exhibited by Continental Supply Co.)

Buckeye Tools Corp.
Dayton, Ohio
12N North Area

In attendance

E. B. MEYNARD, H. H. HARRIS, ROBERT V. SHAFFER, H. J. FISH.

Buckeye Tools Corp. is exhibiting its line of portable air tools and high-frequency electric tools. Typical models of all tools in the Buckeye Tools line, including grinders, sanders, nutrunners, drills, shears, nibblers, screwdrivers, and wrenches are being shown. Featured is a continuous demonstration of air-powered portable grinders, screwdrivers, nutrunners, shears, and nibblers.

Bucyrus-Erie Co.
South Milwaukee, Wis.
Blocks 4C and 201B

In attendance

L. B. BIRCKHEAD, E. M. HEUSTON.

Two of Bucyrus-Erie's spudders and a truck-mounted Hydrocrane are being shown. A tandem-axle 48-I. spudder, equipped with an A-frame and drilling with a complete string of tools is set up at one of the exhibit areas.

Along with the operating spudder Bucyrus-Erie is displaying its tandem-axle-trailer-mounted 36-I. unit. In addition to this a truck-mounted Hydrocrane is being shown.

Brown Oil Tools, Inc.
Houston, Tex.
Block 204

In attendance

C. C. BROWN, JOE R. BROWN, L. BAKER RICHARDSON.

A complete line of equipment featuring its recently developed line of packers is exhibited by this company.

A new all-purpose packer, the Duo-Pak developed by Brown, is being displayed. This packer has self-actuating, cup-type seals above and below the setting, gripping, and sealing mechanism, which prevent them from becoming fouled by foreign matter. These cup seals also provide auxiliary setting force from above or below the packer. The principal sealing element of the Duo-Pak is radially expansible packing which is not dependent entirely on tubing weight for compression to effect a reliable seal. Initial radial expansion by the sealing stem brings the seal into sealing position with the casing. Flow of rubber away from sealing engagement is prohibited by metallic retainers at each end of the seal which move into engagement with the casing as the seal expands.

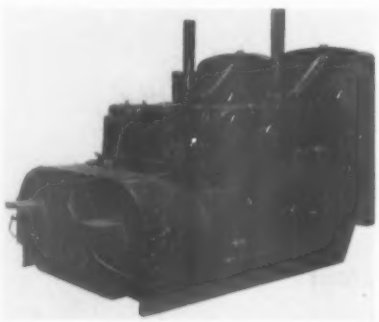
Buda Co.
Harvey, Ill.
Block M

In attendance

H. H. COHENOUR, J. C. BASEHEART, W. STOLL, R. K. MANGAN, C. N. GUERASIMOFF, A. F. OCHTMAN, L. KERLIN, D. KEUTHE, and HANS L. WITTEX, Buda Co.; J. B. REAVIS, G. TEMPLE, O. F. DICKENSON, V. B. STOVER, T. J. HOWARD, M. W. HILTPOLD, and F. A. DIMMIT, Buda Engine Sales & Service; J. MUNRO, R. C. JACKSON, KIRK ROTE, H. O. WATSON, D. L. ELLIOTT, W. H. BENDUHN, and C. M. LACKEY, Buda Engine & Equipment Co.; W. L. SOMNER, W. L. Somner Co.

The Buda Co. is showing its new line of oil-field diesel, natural-gas, gasoline, and butane engines. Over 20 models ranging in sizes up to a new eight-cylinder power unit developing 463 usable horsepower at 1,000 r.p.m. are displayed. Also shown are generator sets for furnishing light for drilling rigs along with a new 4,000-lb. fork-lift truck equipped with a four-drum carrier for stacking and handling large oil drums and other packaged petroleum products. In addition, two new sizes of marine engines for powering offshore boats and a new model truck diesel for powering large oil trucks and tractors hauling up to 60,000 lb. are exhibited.

Buda's oil-field-engine exhibit, in addition to the new natural-gas eight-cylinder 3,518-cu.-in.-displacement unit, includes a diesel unit developing 380 usable horsepower at 1,000 r.p.m. A second series of engines equipped with torque converters and mounted as twin units connected to compound gears is also being shown. One of these is a twin engine unit connected to an Alamo Machine gear. Combined rating of this unit is 350 hp. at 1,800 r.p.m.



Buda Twin 6-MO-970 natural-gas engine connected to Alamo gear.

Buda Engine Sales & Service Co.
Tulsa, Okla.
Block T

For personnel in attendance, see Buda Co., which is located in Block M.

Buda Engine Sales & Service Co.'s exhibit correlates, with Buda engines, various engine and power plant equipment. Displayed is a wide range of items in service on Buda equipment.

Burch Agate Torpedo
Borger, Tex.
81 Scientific and Technical Building

In attendance

J. GORDON BURCH

Exhibited is the Burch Agate Torpedo which is known as "The Marble Shot." The tool is designed to remove production-retarding substances in oil and gas wells by complete well-wall resurfacing. The effect of the tool is similar to but much greater than surface sandblasting. The Marble Shot is serviced by explosive shooting companies.

Burch Agate Torpedo.

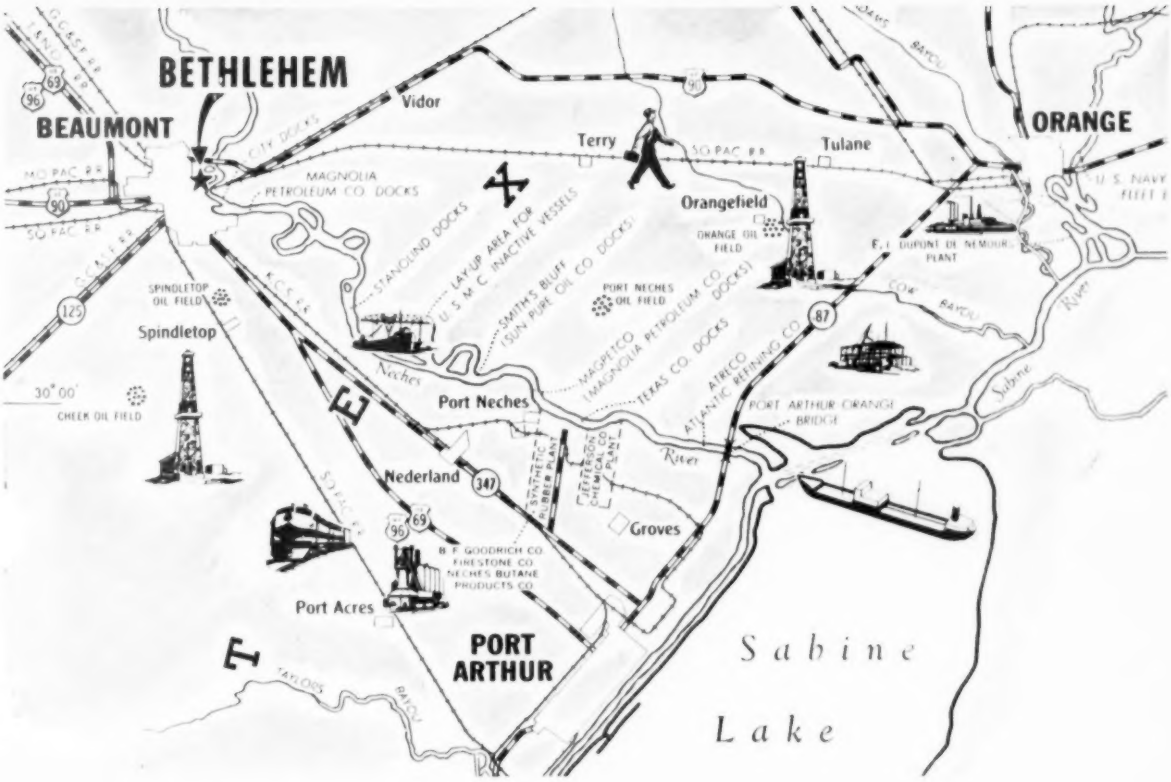
Butler Manufacturing Co.
Kansas City, Mo.
Block 116

In attendance

GLEN C. SPEAKMAN, GREGORY A. BURNS, WILBUR B. LARKIN, TED NEYER, LOUIS BROWN, W. A. SLADEK, ROBERT E. BOTZ, ROBERT H. McKINLEY.

Butler is exhibiting its newest and most technologically advanced equipment for the oil industry. The display includes a Butler rigid-frame steel building with galvanized side walls and aluminum roof. Mounted on top of the building is a new 1,000-gal. Butler truck tank installed on a new International truck. On the floor, Butler has a giant 6,000-gal. transport trailer tank on a White tractor.

Three bolted tanks showing different interior coatings are also being displayed. One tank is coated with a new epon plastic, another tank has a vinyl resin coating, and the third tank is a standard galvanized unit. Walkways and stairways around the tanks facilitate inspection.



BETHLEHEM AT BEAUMONT ☆

SHIP CONSTRUCTION — Drilling, Gas Compressor and Tank Battery Barges. Offshore Drilling Tenders and Service Vessels. Integrated and Mobile Drilling Platforms. Integrated Tows or Single Barges for Propane, Butane, Anhydrous Ammonia, Gasoline, Oil, Acid, Water, Molten Sulphur, Ore and Derricks. Car Floats, Lighters, Scows. Harbor, River and Oceangoing Craft.

SHIP REPAIR and CONVERSION—Tugs to T-2 Tankers and C-4 Cargo Ships. Marine Engine Work.

GENERAL FABRICATION—Storage Tanks, welded or riveted. Surge Tanks. Bubble Towers. Distilling Units. Agitators. Separators. Pressure Vessels. Spheres. Underwater Tunnel Sections. Gas Transmission Lines. General Steel Fabrication.

INDUSTRIAL WORK—Repair, Reconditioning and Manufacture of a Wide Range of Equipment for *Industry Ashore.*

SHIP REPAIR YARDS

Boston Harbor	New York Harbor
Baltimore Harbor	Beaumont, Texas
Los Angeles Harbor	San Francisco Harbor

SHIPBUILDING YARDS

Quincy, Mass.	Staten Island, N. Y.
Sparrows Point, Md.	Beaumont, Texas
Terminal Island, Calif.	San Francisco, Calif.

SHIPBUILDERS *SHIP REPAIRERS*

BETHLEHEM STEEL COMPANY

Shipbuilding Division

General Offices: 25 Broadway, New York 4, N. Y.

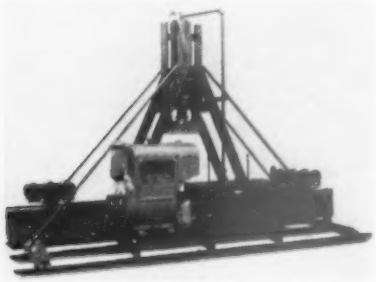
On the Pacific Coast shipbuilding and ship repairing are performed by the Shipbuilding Division of Bethlehem Pacific Coast Steel Corporation

I.P.E. EXHIBIT DIRECTORY

G. T. Bynum Co.
Tulsa, Okla.
Block 120A

In attendance
G. T. BYNUM, G. T. BYNUM, JR., CHESTER O. McWHORTER.

Speed is the theme of this exhibit. On display is a pipe straightener designed to handle sizes up to 16 in. Along with this high-speed straightener are displayed a hand-operated unit and various other devices for salvaging pipe in the different divisions of the oil business.



G. T. Bynum's 44-Pu4 pipe straightener.

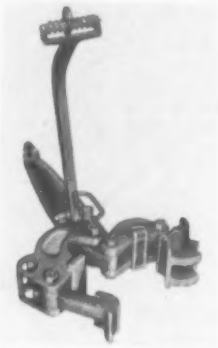
Byron Jackson Co.
Dempsey Pump Division
Los Angeles, Calif.
209-210 Oklahoma Building

The new Hydralift subsurface hydraulic oil-well production unit is displayed by Dempsey Division. Two specially designed display models with clear plastic cases are used to show operation of the pump and valve. The Hydralift is a complete bottom-hole production unit consisting of a hydraulic engine which drives a standard, single-acting pump piston. The lower pumping unit carries a traveling valve and the upper engine unit is provided with a three-way reversing valve which controls the reciprocating motion of the unit. The engine is actuated by power fluid fed through a small or macaroni string of tubing from a power source (usually a triplex pump) on the surface. The well production and the exhaust power fluid are discharged to the surface through a standard tubing string.

BJ Hydralift pump model with clear lucite case.

Byron Jackson Co.
Los Angeles, Calif.
209-210 Oklahoma Building and Block 102

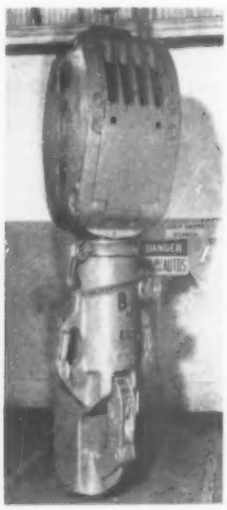
A completely new unitized hook and traveling block featuring a hook positioner and a flexible connection between the block and hook is being shown. The newly developed hook positioner is located at the top of the hook. An arm carrying a cam follower can be locked at any angular position with respect to the traveling block. Whenever the load is removed from the hook, and the springs collapse it, this cam follower rotates the hook body to the desired angular position. The hook also incorporates a hydraulic shock absorber. As the hook is loaded (extended) or unloaded (collapsed), the oil which nearly fills the body must pass through the annular clearance between the sprint seat and the bore of the body. This minimizes the impact loading encountered when the elevators pick up the drill pipe while accelerating.



B.J. Type "F" rotary tongs.

Another feature of this new tool is the flexible connection between the block and hook.

A minimum in over-all length, the B.J. Unimatic 200-ton capacity hook-block combination measures approximately 115 in. over all. Byron Jackson Co. is also showing another new tool for the first time, its lightweight rotary tongs.



B.J. Unimatic hook block.

A completely new air-powered tubing spider is also among the group of new products. This spider handles 2⅜-in., 2⅞-in., and 3½-in. o.d. tubing strings by changing the unitized slip assemblies for the three pipe sizes. The same slips also operate with tubing strings that have gas-lift valves and work equally well with parallel strings of tubing merely by removing the fingers on the right and left-hand slips.

Byron Jackson Co. PB Division
Los Angeles, Calif.
209-210 Oklahoma Division

PB Division's exhibit is focused on methods and equipment to eliminate waste motion and materials. Highlighted is its casing and drill-pipe protectors. In design, these drill-pipe and casing protectors have been progressively developed by PB. Data on the protectors are available at the PB exhibit location.

BJ (PB Division) casing protector.

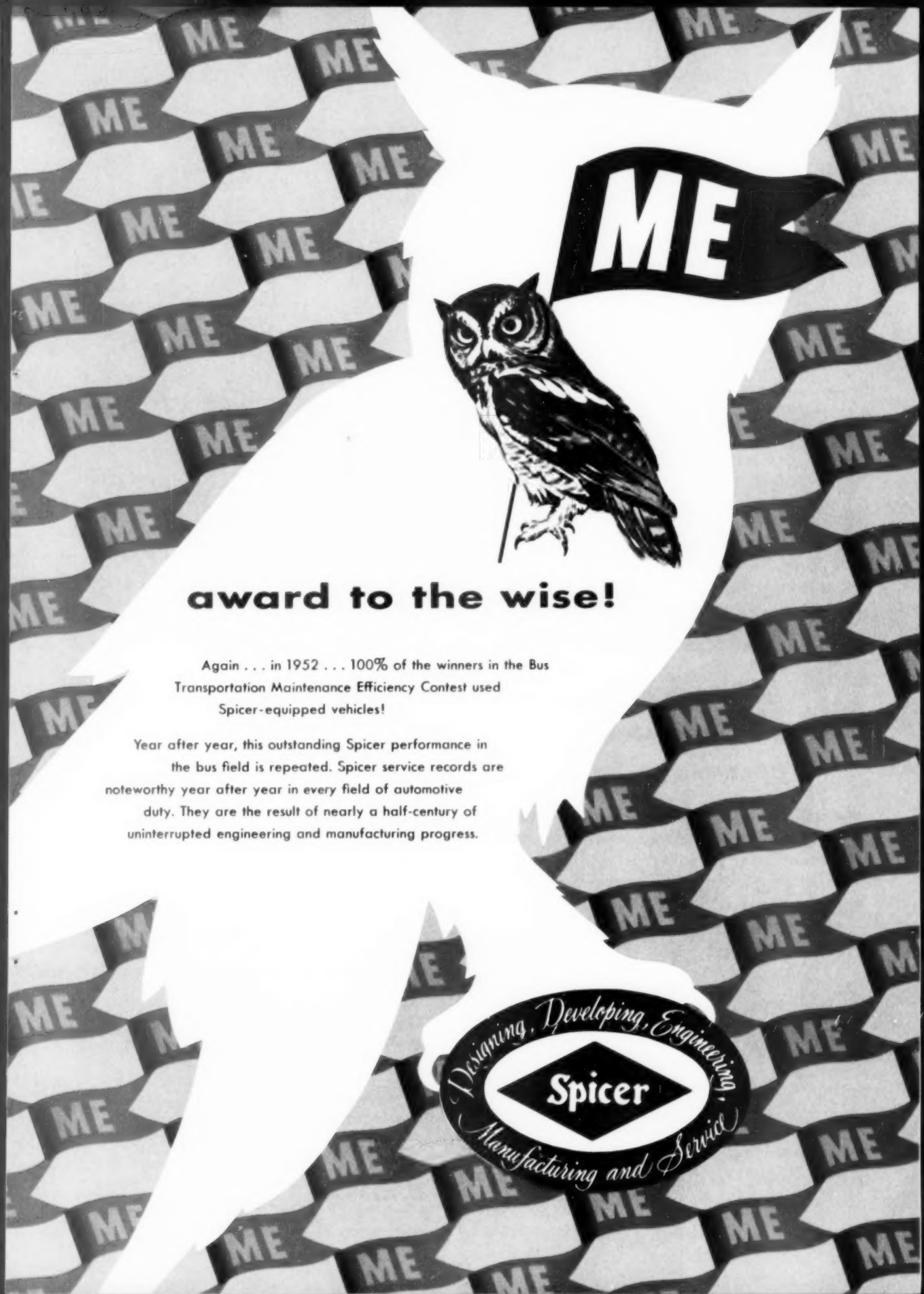
Byron Jackson Co. Pump Division
Los Angeles, Calif.
209-210 Oklahoma Division

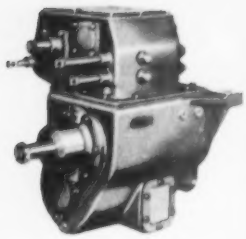
Highlight of the Byron Jackson Co. Pump Division display is a mobile pump exhibit. This mobile display is custom-built on a special truck bed and features cutaway models of 12 different centrifugal pump models. Operation of all moving parts can be seen as these models are rotated at slow speed by small electric motors. Special feature of the display unit is a full-view cutaway of the BJ submersible deep-well water pump including a submerged electric motor and mercury seal.

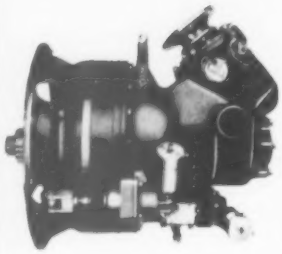
BJ pump mobile display.

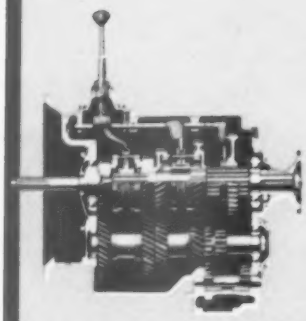
Cameron Iron Works, Inc.
Houston, Tex.
225-228 Oklahoma Building and Block 115

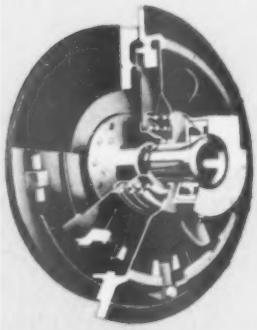
In attendance
R. F. FARMER, ROY W. DAVIS, J. A. TENNANT, D. C. WASHBURN, H. C.

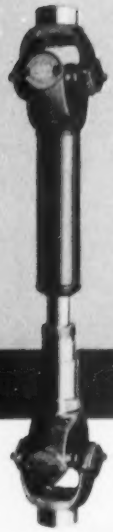

ME
award to the wise!
Again . . . in 1952 . . . 100% of the winners in the Bus Transportation Maintenance Efficiency Contest used Spicer-equipped vehicles!
Year after year, this outstanding Spicer performance in the bus field is repeated. Spicer service records are noteworthy year after year in every field of automotive duty. They are the result of nearly a half-century of uninterrupted engineering and manufacturing progress.
Designing, Developing, Engineering, Manufacturing and Service
Spicer

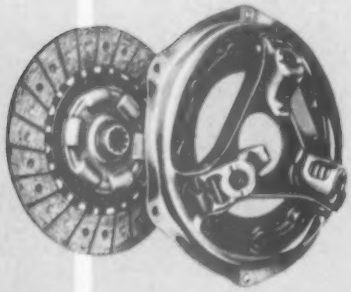






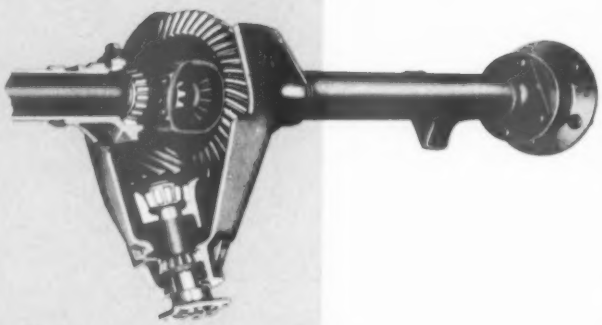






Billions of people moved faster, easier because of Spicer

Spicer furnishes high-precision equipment for practically every power-transmission need in automobiles, buses, trucks, tractors and other civil and military vehicles. With its ten modern production plants . . . and its skilled personnel in every department . . . Spicer can serve you fully, completely, dependably.



49 YEARS OF

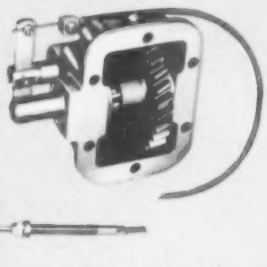
Spicer

SERVICE

ENGINEERING

DANA

MANUFACTURING



SPICER MANUFACTURING DIVISION

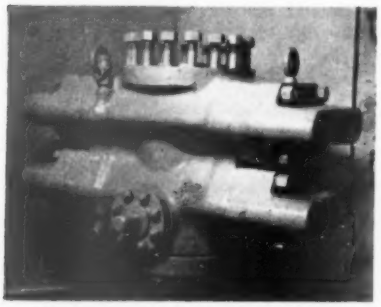
of Dana Corporation • Toledo 1, Ohio

TRANSMISSIONS • UNIVERSAL JOINTS • BROWN-LIPE AND AUBURN CLUTCHES • FORGINGS • PASSENGER CAR AXLES • STAMPINGS • SPICER "BROWN-LIPE" GEAR BOXES • PARISH FRAMES • TORQUE CONVERTERS • POWER TAKE-OFFS • POWER TAKE-OFF JOINTS • RAIL CAR DRIVES • RAILWAY GENERATOR DRIVES • WELDED TUBING

CREATH, N. G. LOUDOUN, PAUL EDKIN.

Cameron's exhibit is focused on its new "SS" (space saver) blowout preventer. This compact unit features both blind and pipe rams in the same body.

Shown as a companion to the new preventer is Cameron's own design of blowout-preventer operating units which are adaptable to its "QRC" preventers. Another new item is a simple, inexpensive swivel elbow, to facilitate rigging up the pipe manifold between blowout preventer and operating unit. Still another new device is a weight indicator. This new instrument retains all of the features of Cameron's "C" instrument, plus improvements which have been thoroughly field tested on its "E" and "F" instruments.



Cameron's new "SS" blowout preventer.

Cameron Iron Works, Inc.
Forge & Ordnance Division
Houston, Tex.
225-228 Oklahoma Building

In attendance

J. G. LONG, A. D. BLACKLEDGE, CLYDE DAVIS, R. E. HAGER, J. J. HASTIK, J. W. HINDMAN, GEORGE LACY, O. L. LOREHN, G. E. NEVILL, D. D. TURNER, D. E. WILSON, HARRY YOUNG.

This division of Cameron Iron Works, producers of steel forgings, is displaying a variety of intricately shaped, heavy-steel forgings. Etched sections of these forgings for examination of grain flow and structures are also displayed. In addition, photographs of the company's plant, its 5,000-ton press, and a new 11,000-ton press which is currently being stalled, are shown.

One of the many types of forgings produced by Cameron Iron Works, Inc., Forge & Ordnance Division.

STOPS WEEDS

Wherever ground must be kept bare of fire-hazardous weeds and grasses... use BORASCU... the modern, low-cost weed killer! Ease of application and effective results make BORASCU a very wise choice for the long-lasting destruction of unwanted vegetation about your tank batteries, well sites and heater units, etc. Weeds *can't* grow on ground that has been properly treated with BORASCU. Nor do you need special equipment... just a man, a pail, and BORASCU.

CONCENTRATED BORASCU WEED KILLER

- NOTHING TO MIX
- NO WATER TO HAUL
- NONCORROSIVE TO FERROUS METALS
- NONPOISONOUS
- NONSELECTIVE

Kills weeds for pennies

Saves you Dollars

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DIVISION OF BORAX CONSOLIDATED, LIMITED

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Weed Control Representatives located in AMARILLO, FT. WORTH and HOUSTON, TEX. • AUBURN, ALA. • NEW YORK CITY • PHILADELPHIA • CHICAGO • CLEVELAND • DENVER • KANSAS CITY, MO. • MINNEAPOLIS, MINN. • POCATELLO, IDAHO • PORTLAND, ORE. • SAN FRANCISCO. Home Office: 630 SHATTO PLACE, LOS ANGELES 5, CALIFORNIA

I.P.E. EXHIBIT DIRECTORY

Canadian Survey Supplies, Ltd.
Calgary, Alta., Canada
Block 201
In attendance
B. V. FRENCH
(See Winter Weiss Co.)

Capewell Manufacturing Co.
Hartford, Conn.
1N North Area
In attendance
SEERY C. GORDON, JOHN DWYER, FRANK BRASWELL.

Capewell is featuring its line of pipe-threading tools and machines, plus hand and power hack saws, band saws, and ground flat stock.

Carboloy Department, General Electric Co.
Detroit, Mich.
39N North Area

How created metals are used in the oil industry is the feature at the Carboloy Department exhibit. The display emphasizes tungsten carbide (the hardest metal made by man, used in drill bits, etc.), and chrome carbide (a new carbide with outstanding erosion and corrosion-resistance characteristics).

Also included are Hevimet (the densest metal made, and used in radioactive shielding and as a counterweight where space is a primary consideration), and Carboloy permanent magnets (applicable for retrieving broken bits and other metal parts from shafts and holes, as well as numerous other applications).

Cardwell Manufacturing Co., Inc.
Wichita, Kans.
Block Q

Cardwell is featuring its new, three-engine, 10,000-ft. draw works powered by three General Motors engines with Allison torque converter. Cardwell is also displaying its new single-engine, double-drum draw works for the first time. This unit is designed for 4,500-ft. drilling and for workovers up to 10,000 ft. The new unit is equipped with air-controlled "Flex-Disc" and "Air-Disc" clutches. It also incorporates a troque converter with special Torqumatic transmission and is mounted on a Cardwell Trailermast.

Two truck-mounted units incorporating Cardwell's new "A" series rigs along with a truck-mounted double-drum servicing hoist are also being shown.

In addition, a single-drum draw works, powered by two General Motors engines, a double-drum draw works, powered by Caterpillar engines, and a Cardwell Model R unit with spudder are on display. The display is rounded out with Cardwell's Flex-Disc and Air-Disc clutches.

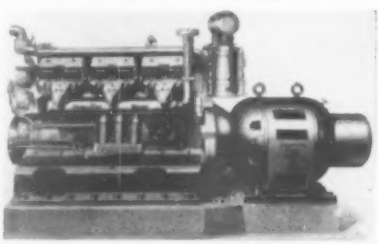
Carter, S. C., Hydraulic Long Stroke Pumping Unit
Los Angeles, Calif.
S. of Hall of Science

Carlon Products Corp.
Cleveland, Ohio
21N-22N North Area
In attendance
WALTER S. PRENDERGAST, E. S. MORELAND, OTIS C. JOHNSON, JR., ROBERT E. BELL, Carlon Products Corp.; JACK GREEN, IVAN KINDER, CHARLES HEALY, JIM GLEN, C. G. WHEELER, Green Contracting & Engineering Co.

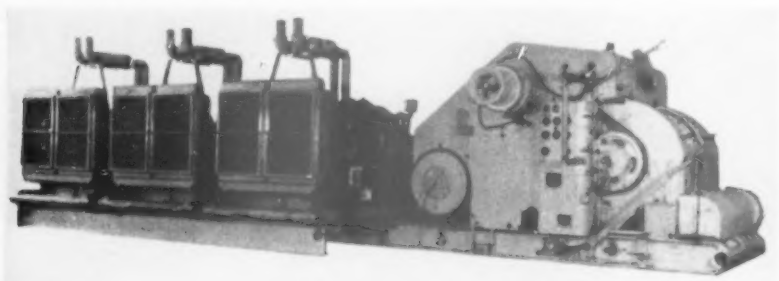
This display includes an entire line of flexible and rigid plastic pipe, plus standard fittings and connections for the oil industry. In addition, sections of Carlon plastic pipe cut from actual installations in the field are displayed. Personnel are on hand to discuss any engineering or service problems concerning Carlon plastic pipe.

Caterpillar Tractor Co.
Peoria, Ill.
Block C
In attendance
J. S. ELSNER, J. W. LUSCH, J. J. VALENTINE, R. V. CARLSON, R. R. ROBINSON, G. E. BURKS, J. C. WILLIAMSON, R. C. HUBERT, JERRY COOK, HERB BRENNEMAN, C. J. BACHLER, F. V. JACOBS, R. D. NICHOLS, HUGH ROSE, L. WILLIAMS, FRANK KOTTMEIER, B. R. SHELLEY, R. E. STRONG, N. M. ERDAHL, R. W. FABERE, R. V. OSTERHOUT, C. A. BARABE, E. A. WICKMAN, J. WALKER, R. L. DALLACH, R. E. DONOHOE, JACK GILL, H. H. HOWARD, W. CASE, R. JUMP, T. J. THOMAS, E. H. BELL, R. J. LAMOUREAUX, J. P. MORGAN, C. B. LEBER, K. F. AMES, L. L. MORGAN, J. G. WILSON, J. GILBERT, WARREN ROHR, M. E. FEARIS.

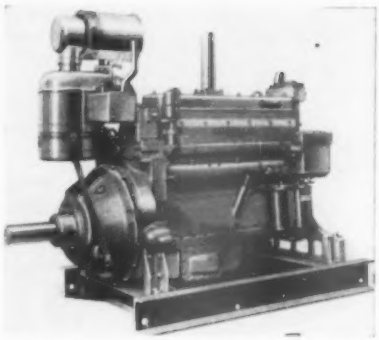
Space in the Caterpillar exhibit is occupied by 14 of its engines, one cutaway model of the company's largest engine, and five machinery units which serve the oil industry. Of significance to the oil industry is Caterpillar's recently announced diesel engine which is shown in twin arrangement with



Caterpillar electric set.



Cardwell 10,000-ft. draw works.



Caterpillar's skid-mounted power plant.

Alamo compound. Two more of these engines are on display, one a marine unit and the other equipped with a torque converter.

Other equipment on display includes a Caterpillar track-type tractor with pipe layer, a diesel tractor with Hyster Hystaway, back hoe and Fleco rock rake along with a diesel tractor with pipe layer arrangement and angle filler, and the recently announced Caterpillar shovel with Caterpillar worm drive winch. Also on exhibit is an experimental model of a detachable ditching machine built by Unit Rig and mounted on a Caterpillar diesel tractor with bulldozer. An Athey wheel drilling exhibit rounds out the Caterpillar spread.

Cavins Co.
Long Beach, Calif.
30-31 Kansas Building

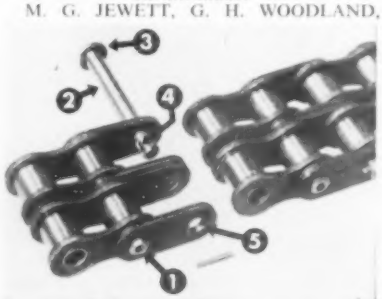
Central X-Ray & Supply Co., Inc.
Tulsa, Okla.
2 Kansas Building

Century Geophysical Corp.
Tulsa, Okla.
29-30 Scientific and Technical Building and Block 104
In attendance
T. J. RAY, JR., ARNOLD BARNES, JACK STAFFORD.

At its outside exhibit space in Block 104 Century Geophysical is displaying a complete recording truck and a complete shooting truck. A complete set of seismograph instruments including geophones, amplifiers, oscillograph and all allied accessory equipment is being shown at the company's inside location in the Scientific and Technical Building.

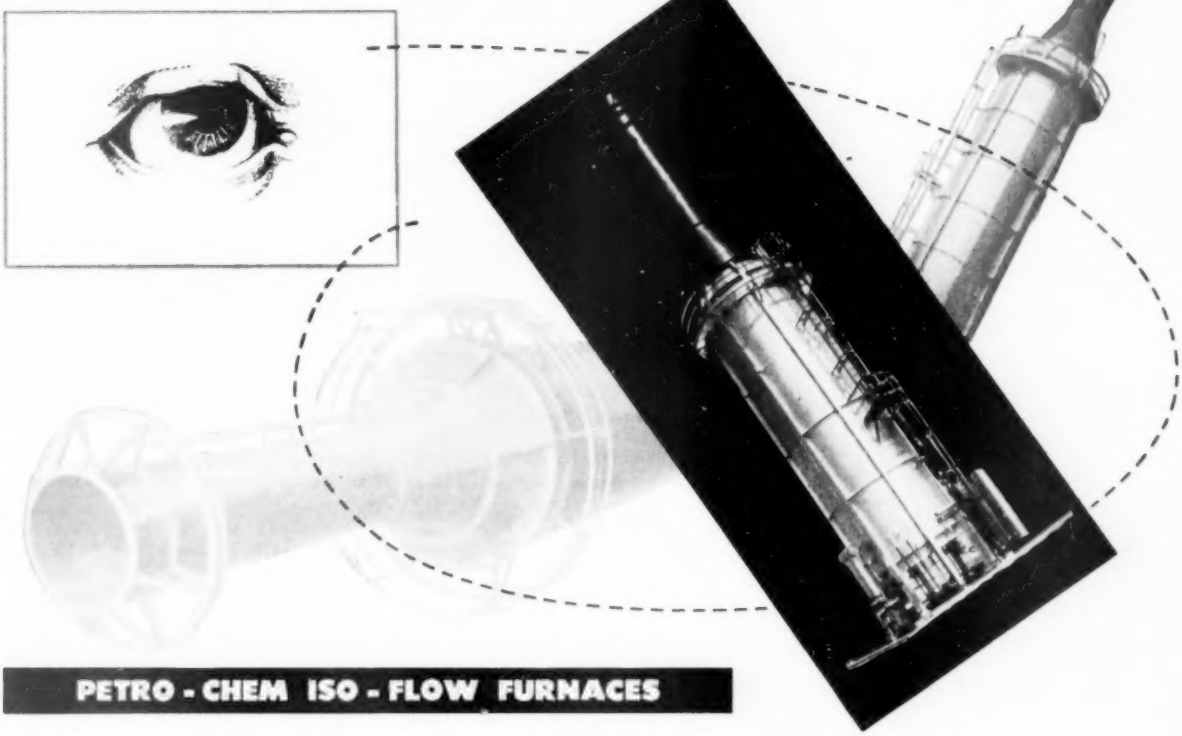
Cessna Aircraft Co.
Wichita, Kans.
Block 104

Chain Belt Co.
Milwaukee, Wis.
99-100 and 111-112 Texas Building
In attendance
M. G. JEWETT, G. H. WOODLAND,



Baldwin single-pin coupler link.

anyway you LOOK *at it!*



PETRO - CHEM ISO - FLOW FURNACES

are most efficient by any comparison!

maximum fuel efficiency

low maintenance

low pressure drop

minimum ground space

better heat distribution

simplicity of design and construction

The generic design of ISO-FLOW heaters, including the reradiating cone, gives excellent heat distribution, eliminating localized overheating. Further, all walls are protected by tubes which create low wall temperatures. The walls have high insulating characteristics which create minimum outside shell temperatures, and, hence, extremely low radiation. With a radiation loss of under 2%, more heat is absorbed by the fluid being heated, resulting in higher efficiency for any type of Iso-Flow design. Since Petro-Chem has a wide variety of convection sections, all heaters can be designed for optimum fuel efficiency or for maximum fuel efficiency where the price of fuel and other economic considerations justify.

More than 1100 are in operation throughout the world in the petroleum, chemical and allied industries . . . for all processes and for any duty, pressure, temperature and efficiency . . . and all Petro-Chem Iso-Flow Furnaces are pre-eminently satisfactory.

PETRO-CHEM ISO-FLOW FURNACES

UNLIMITED IN SIZE . . . CAPACITY . . . DUTY

PETRO-CHEM DEVELOPMENT CO., INCORPORATED

122 EAST 42ND STREET, NEW YORK 17, N. Y.

Representatives: Bethlehem Supply, Tulsa and Houston · Flagg, Brackett & Durgin, Boston · D. D. Foster, Pittsburgh · Faville-Levally, Chicago · Lester Oberholtz, California · Gordon D. Hardin, Louisville, Kentucky

PHIL IMSE, BRINTON WELSER, E. M. RHODES, R. V. POISSON, HERMAN KLAUCKE, GEORGE SIMPSON, G. B. FLANIGAN, G. H. PFEIFER, AI CALKINS, W. W. KLEMME, ROY BOETTCHER, DAVE BREITH.

This exhibit features power-transmission chains and self-priming centrifugal pumps for oil-country use. Prominent in the display is a new Baldwin roller chain for use on rotary and service rigs. Actual demonstration is made of this chain's capabilities.

The complete line of the company's Rex A.P.I. drilling chains and a plastic working model of a Rex self-priming, centrifugal pump are being shown.

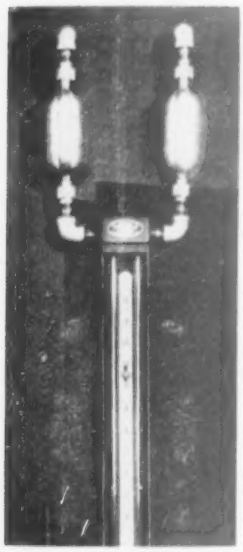
Chemiquip Co.
New York, N. Y.
77 Oklahoma Building

In attendance

JULIAN LIPPMAN, SYLVIA SICHEL, HORACE HALL, DON DRISCOLL, VERNON JENNINGS, PAUL KING, Paul King Co.; REDWOOD L. SPRINGFIELD, Gay Sales Co.; D. R. READ, Read Engineering Co.

Along with its various products including a micropressure snubber, Chemiquip is showing its new Mercureceiver. Designed to trap mercury blown from manometers, a Mercureceiver also smooths out pressure impulses and fluctuations, gives steady average pressure readings, and achieves equilibrium readings in 10 seconds or less.

Chemiquip Co.'s new micrometallic pressure snubber is designed to give steady average pressure readings, smooth out pressure impulses and fluctuations, eliminate pressure-gage failure due to shock, remove harmful solids from actuation fluid, and not to clog in pressure-gage service. It has no moving parts.



Chemiquip Co.'s Mercureceiver.

Charles Machine Works
Perry, Okla.
Block 207

In attendance

EDWIN MALZAHN, CHARLES MALZAHN.

Featured at this exhibit is the Ditch Witch, a lightweight trencher manufactured in three different sizes. The unit is designed primarily for trenching for electric cable and small-diameter pipe.

Charles Machine Works is also showing its Geronimo safety appliance. This equipment permits workmen to make emergency escapes quickly and safely from structures such as drilling masts, refinery towers, and the like. The Geronimo operates on a permanently or temporarily installed track cable.

The Charles Machine Works' Ditch Witch.

Chevrolet Division, General Motors Corp.
Detroit, Mich.
Block 10

Chevrolet Motor Division's truck exhibit consists of both complete units and workable models of the major components making up a modern motor truck. The complete trucks have all of the special equipment and devices necessary for oil-field work.

Nine different Chevrolet trucks ranging from light-duty pickups to the highly specialized exploration units are being displayed. Each is adaptable to some particular phase of the oil industry. Activated models explain the inner workings of such items as synchromesh transmissions, twin-cylinder hydraulic brakes, and recirculating ball-gear steering. A cutaway complete heavy-duty truck chassis shows the relationship of the various components and how they work together as a team to supply the usable power at the rear wheels.

Chevrolet truck fully equipped for oil-field service.

Chicago Bridge & Iron Co.
Chicago, Ill.
85-86 and 125-126 Texas Building

In attendance

I. L. WISSMILLER, C. M. ORR, I. E. BOBERG, F. D. MOYER, GEORGE S. TREES, D. A. LEACH, S. C. HAMILTON, J. U. BLANCHARD, M. G. MITCHELL, F. L. GOLDSBY, E. N. ZIMMERMAN, J. G. DANIELS, R. E. MORRIS, E. P. SHELTON.

Two operating models of this company's vapor-saving systems are one of the features at this exhibit. The systems are set up to show operation of a Hortondome roof as a central storage unit and how a Vapor-sphere serves as temporary storage for vapors.

Other exhibits include a model of a Horton Double-Deck floating roof showing the method of sealing. In addition are samples of steel plate treated by the Horton pickling process. A display of enlarged photographs shows the company's line of Horton products.

Chicago Pneumatic Tool Co.
New York, N. Y.
Block A

In attendance

E. L. MILLER, J. B. STEEN, D. P. TARPENNING, PAUL SMITH, W. F. SKEEN, E. F. FITZSIMONDS, A. F. SMISSEN, J. J. OLIVIER, T. P. HARRIS, J. F. HUVANE, R. A. RANKIN, G. B. DONER, R. T. BEERS, D. G. REEDER, G. J. COFFEY, J. B. TIFFANY, R. BAILEY, J. T. MURPHY, T. A. CONNELLY, A. CHAMBERLAIN, F. G. LISTER, E. K. HUBBARD, R. L. McGREW, N. P. DONALDSON, R. L. SMITH, F. G. BINGER, J. McSHERRY.

This company's display of tools for the drilling contractor includes three cone bits for all formations. The exhibit features a new jet-piercing bit. Other Chicago Pneumatic products displayed are reaming bits, tool joints, drill collars, stabilizing reamers, and junk baskets.

A display of pneumatic refinery-maintenance tools includes chippers, scalers, grinders, masonry drills and light demolition tools,

Chicago Pneumatic Tool Co.'s portable unit.

rivet busters and cutters, impact wrenches, tube rollers, sump and sludge pumps, and utility winches.

For the pipe-line contractor a new rotary-compressor Trenchdril combination, sinker drills and demolition tools, backfilling and earth-compaction tools, and pumps are shown.

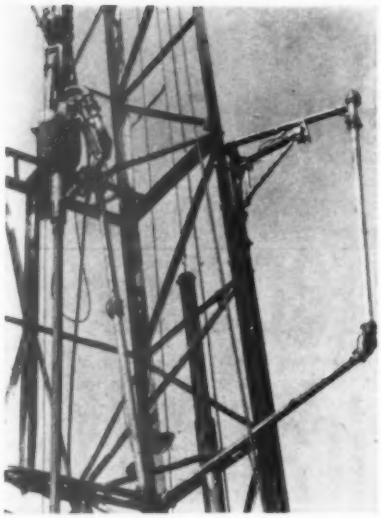
Chiksan Co.
Brea, Calif.
108-110 and 101-103 Texas Building

In attendance

H. J. HAGN, G. R. WINDER, GUS BAGNARD, NELMES THOMAS, PETE BILY, LOU SMITH, ED LANDGRAFF, LEE GUILL, JACK RUNNELLS, JOE SCHLARB, FRANK WIEGAND, WALT BERNTSEN.

Chiksan Co. and its division, Well Equipment Manufacturing Corp., have a joint exhibit at adjacent locations. Feature of this exhibit is an 8-ft. working model of a portable rig, showing the functioning of Chiksan and Weco equipment. The model, which operates automatically or manually, will demonstrate Chiksan's new Hose Saver arm. Used in conjunction with a drilling swivel extension, this equipment provides flexibility and safety, prevents rubbing of the hose against the mast leg, and keeps the derrick floor clear of hose. The arm can be used with either Chiksan all-steel rotary hose or with ordinary rubber hose to increase the radius of bend of the hose, preventing damage due to kinking or twisting. The model also shows Chiksan mud guns in actual operation.

Also on display are models and cutaways of Chiksan ball-bearing swivel joints and Weco unions. Of interest to refinery and petrochemical-plant personnel is a model of



View showing Chiksan Hose Saver arm in operation.

a new automatic drum-loading unit incorporating Chiksan swivel joints. Other models on view will illustrate dock-loading installations designed by Chiksan.

Well Equipment Manufacturing Corp., which manufactures a complete line of wing unions, is displaying these items along with blocks, burners, stoves, and thread compounds. Chiksan circulating and cementing hose, circulating heads, mud guns, and all-steel rotary hose are also displayed.

Christensen Diamond Products Co.
Salt Lake City, Utah
1-2 Silver Lane

In attendance

EDWARD MAX JENKINS, JAMES WHITAKER, CLYDE ANDERSON, H. ROGER SMITH.

Focal point of this exhibit is a series of slides showing the steps required in manufacturing diamond bits. Pictures of some difficult oil-industry problems which have been solved by using diamonds are also exhibited.

On display, in addition to a model core barrel, and standard diamond-core bits and washover shoes, are various designs of the new diamond drilling bits. Shown is a diamond drilling bit developed in the past year for hard-formation drilling.

This Christensen diamond set reamer is now on test in West Texas.

Christian Science Monitor
Boston, Mass.
6 California Building

Free copies of this international, daily newspaper, delivered via air mail from Boston, are available at various locations on the grounds.

Chromium Plating Co.
Tulsa, Okla.
25 Kansas Block

Chrysler Corp.
Marine and Industrial Engine Division
Detroit, Mich.
Block 104

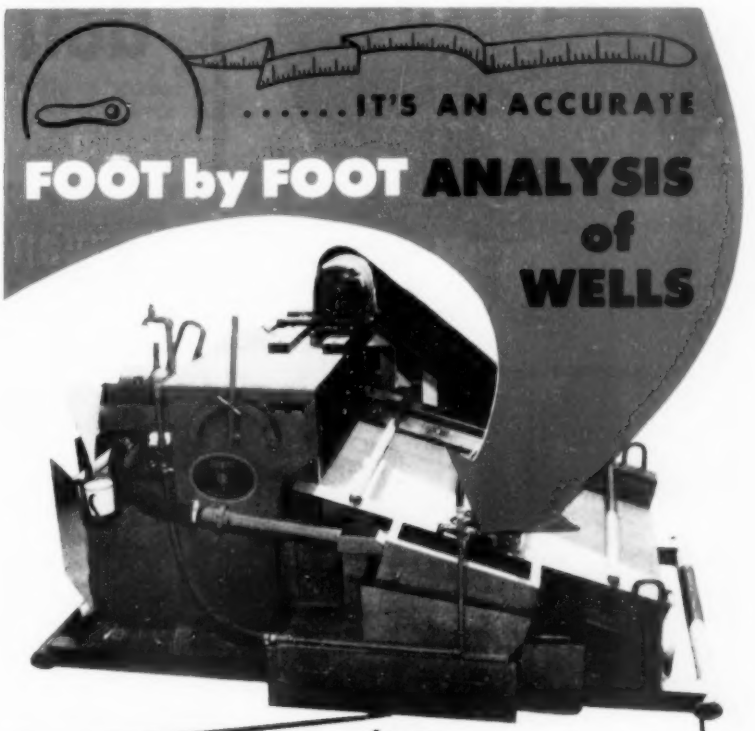
In attendance

C. C. WILLIAMS, J. C. HAMMELEF, C. H. MORRIS, D. D. CHENE, FRANK HARRIS, D. P. GOSHEFF.

I.P.E. EXHIBIT DIRECTORY

Chrysler is featuring its new power unit for oil-industry service. The new unit, developed by Steward & Stevenson, consists of four engines driving a common power-takeoff shaft. The Steward & Stevenson Quad utilizes standard industrial Chrysler V-8 basic engines designed to deliver 500 hp. Where fractional loads are encountered, one or more of the four engines may be clutched out by merely disengaging the friction clutch. Chrysler's Industrial-20 engines are designed for burning either natural gas or butane fuel.

Among the various engines displayed are a cutaway model of Chrysler's Industrial-20, an open-type, skid unit plus an enclosed-power skid unit and an Industrial-8 unit on display stand with four-speed transmission.



With SAMPLES taken from

Thompson's

VIBRATING SHALE SHAKER and SAMPLE MACHINE

You can learn much about drilling formations, due to the famous Thompson Sample machine, which works all the time the shale shaker is in operation. This amazing Sample Machine is recognized by drilling and geologic authorities throughout the industry as being of great value and extremely accurate. It is standard equipment on both the Shale Shaker (pictured above) and the famous Thompson Rotating Self-motivated Shale Separator. Let Thompson go to work for you. Thompson Shale Shakers and Shale Separators are ECONOMICAL IN OPERATION – PROVEN IN PERFORMANCE – SAVE DRILLING COSTS!

ALSO MANUFACTURER OF THE FAMOUS THOMPSON ROTATING SHALE SEPARATOR

SOLD ONLY THROUGH SUPPLY STORES

Thompson TOOL CO.
IOWA PARK, TEXAS

BOTH are essential to effective dehydration

TRETOLITE COMPANY
Tret-O-litE
SAINT LOUIS LOS ANGELES

high quality CHEMICALS

dependable SERVICE

Unless you get *both*, you aren't getting your dehydrating dollar's worth. The Tretolite Company provides both.

Having pioneered chemical dehydrating, Tretolite can offer manufacturing experience and service know-how without equal.

You can prove the truth of these statements by calling your Tretolite field engineer whenever you have an emulsion problem.

If you do this, you will allow Tretolite products and service to speak for themselves — something they have done with marked success for nearly half a century.

***Visit Our Exhibit* I. P. E. — TULSA — MAY 14-23**

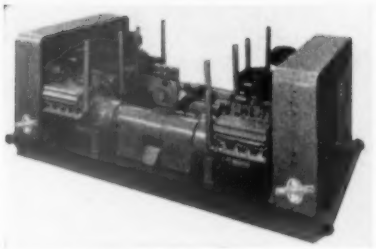
TRETOLITE COMPANY

Chemicals and Services for the Petroleum Industry

SAINT LOUIS 19, MISSOURI
LOS ANGELES 22, CALIFORNIA

DEHYDRATING • DESALTING • CORROSION INHIBITING
SCALE PREVENTING • PARAFFIN REMOVING
WATER DE-OILING

T 53-1



New Chrysler power unit for oil-industry service.

along with a similar engine operating on a display stand with special clear plastic fluid-drive housing unit. Other engines shown are an open-type skid unit, an industrial-power skid unit, an enclosed, industrial-skid unit, and an open-type, skid unit powering 75-kw. generator. Torque converter and fluid-drive units are shown in cutaway views as well as in actual service.

Clark Brothers Co., Division, Dresser Operations

Olean, N. Y.

Block 11

Clayton Manufacturing Co.

El Monte, Calif.

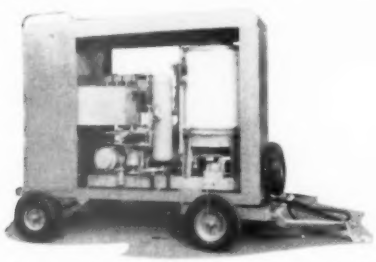
9 Texas Drive

In attendance

H. M. KIRKBY, L. L. STUART, GEORGE MACKEY.

This concern is featuring one of its forced-recirculation steam generators, mounted on a rubber-tired trailer. This 50-hp. "boiler room" on wheels is completely self-contained.

Technical advice on the application of Clayton chassis and engine dynamometers to modern truck maintenance, and on Clayton steam generators is available at the exhibit.



Clayton Manufacturing Co. self-contained, portable steam generator.

Cleco Division of Reed Roller Bit Co.

Houston, Tex.

Block 4

(See Reed Roller Bit Co.)

Cleveland Graphite Bronze Co.

Cleveland, Ohio

14N North Area

In attendance

G. T. ARMSTRONG, L. W. CHRISTENSON, EDWIN CRANKSHAW, E. D. HEIDEGER, ANTHONY KAMINSKAS, J. L. MENRATH, R. E. MOONEY, S. W. PEARN, LADDIE PESEK, L. I. RUBY, R. J. SCHAGER, C. A. WILLIAMS.

This company's exhibit includes bearings and bushings used in drilling equipment, pumps, transportation, and other oil-industry equipment. In this display are the company products used in the assemblies of other exhibitors' equipment.

Cleveland Trencher Co.

Cleveland, Ohio

Block P

In attendance

J. A. PENOTE, N. J. GREENEY, F. J. FETZNER, D. U. ELSCOTT, G. H. HAMCKE, N. V. GRUND, A. R. ASKUE.

Cleveland Trencher Co. is featuring its Model 20 unit which has a trench capacity of 4 ft. wide by 7½ ft. deep, along with its new pipe-line backfiller for larger trenches.

Cleveland Trencher Co.'s ditching unit.

Climax Engine & Pump Manufacturing Co.

Clinton, Iowa

Block 114

In attendance

CARL G. PREIS, E. J. ANSELMAN, F. W. NEUBAUER, R. H. KERR, H. F. PAPE, DAN GRIFFIN, TED SKEEN, GLENN DOYNE, H. T. DANIELS, JACK ALCORN, BURDETTE JORGENSEN.

Makers of Blue Streak engines and pumps, Climax is exhibiting 10 of its oil-field engine models. Both vertical and horizontal models are displayed and all are operating. A cut-away model is also displayed to provide an inside view of the engine construction and all working parts in action.

In addition, Climax mechanics assemble an entire engine at the exhibit location each day just as it is done at the company's factory.

Coffing Hoist Co.

Danville, Ill.

20-22 Kansas Building

In attendance

RAY DOAN

The company is displaying its full line of portable hoisting equipment. Star of the display is its Challenger spur-gear hoist. The first ratchet-lever hoist ever built is also on display. This early-day hoist was made from part of a Model-T Ford frame, the drive chain of a Mack truck, hand-forged hook, and a ratchet wrench.

Coffing Hoist Co.'s Challenger unit.

Also displayed is one model of Coffing's Quik-Lift electric chain hoists and three different models of its Safety-Pull ratchet-lever hoists. Other products shown are two load binders, a safety binder, a new hoist binder, and two Mighty Midget pullers.

Clinton Machine Co.

Maquoketa, Iowa

59 Oklahoma Building

Coleman Instrument Co.

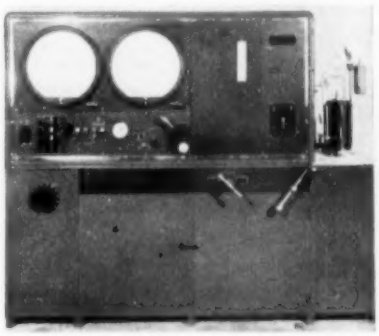
Tulsa, Okla.

1 Kansas Building

In attendance

J. W. WADE, V. W. ABRAHAM, PAUL G. EXLINE, BILL ALLEN, R. W. SCHUETZ, M. F. FELDNER, E. W. LEMON.

Coleman is featuring its combined P.V.T. unit for complete analysis of gas and oil samples. Technical information on Coleman's complete line of reservoir engineering instruments is available at the exhibit.



Coleman Instrument Co.'s oil-and-gas-sample analyzer.

Collins Radio Co.

Cedar Rapids, Iowa

71 Scientific and Technical Building

In addition to its exhibit in the Scientific and Technical Building, Collins Radio Co. has an operating Terminal Visual Omni Range (TVOR) station at the Tulsa Municipal Airport. This equipment is available for actual demonstration. The Collins TVOR unit incorporates, in packaged form, all of the units necessary for a complete TVOR ground station.

At its Scientific and Technical Building location, this company is displaying airborne communications and navigation apparatus. These include: the Collins Integrated Flight System, the 51R-3 airborne navigation receiver, the 17L-3 180-channel VHF airborne transmitter; the 17M 360-channel VHF airborne transmitter, 50 watt; the 51V-2 glide slope receiver; the 51N-2 224 megacycle ground station receiver; and the Collins 30K-4 ground station transmitter. Also displayed is a Collins 75A-3 amateur receiver with the revolutionary new mechanical filter.

Colorado Fuel & Iron Corp.

Denver, Colo.

162-165 Oklahoma Building

In attendance

F. S. JONES, J. N. COUNTER, R. E.

We're "Taking off the wraps"

at the

Tulsa Show!

Be sure to visit Cooper-Bessemer . . . corner of Mid Continent Drive and Okla. City Avenue

Perhaps you've heard that important developments have been under way at Cooper-Bessemer. It's true! And to make your Cooper-Bessemer visit well worth while, we plan to bring you up to date on new power and compressor developments *certain to thoroughly upset present standards of efficiency and economy!*

Unfortunately we can't "jump the gun" . . . but we do suggest that your check list include . . .

★ **1.** GMVA . . . Cooper-Bessemer's new V-angle compressor. See *why* this new unit boosts horsepower 33⅓% and reduces fuel consumption 10% *while operating at greatly reduced heat load!*

★ **2.** SERVICE FACILITIES . . . Be sure and have a look at the exceptional personnel, service and warehousing facilities Cooper-Bessemer offers today to give you fast, capable action in every active oil and gas area.

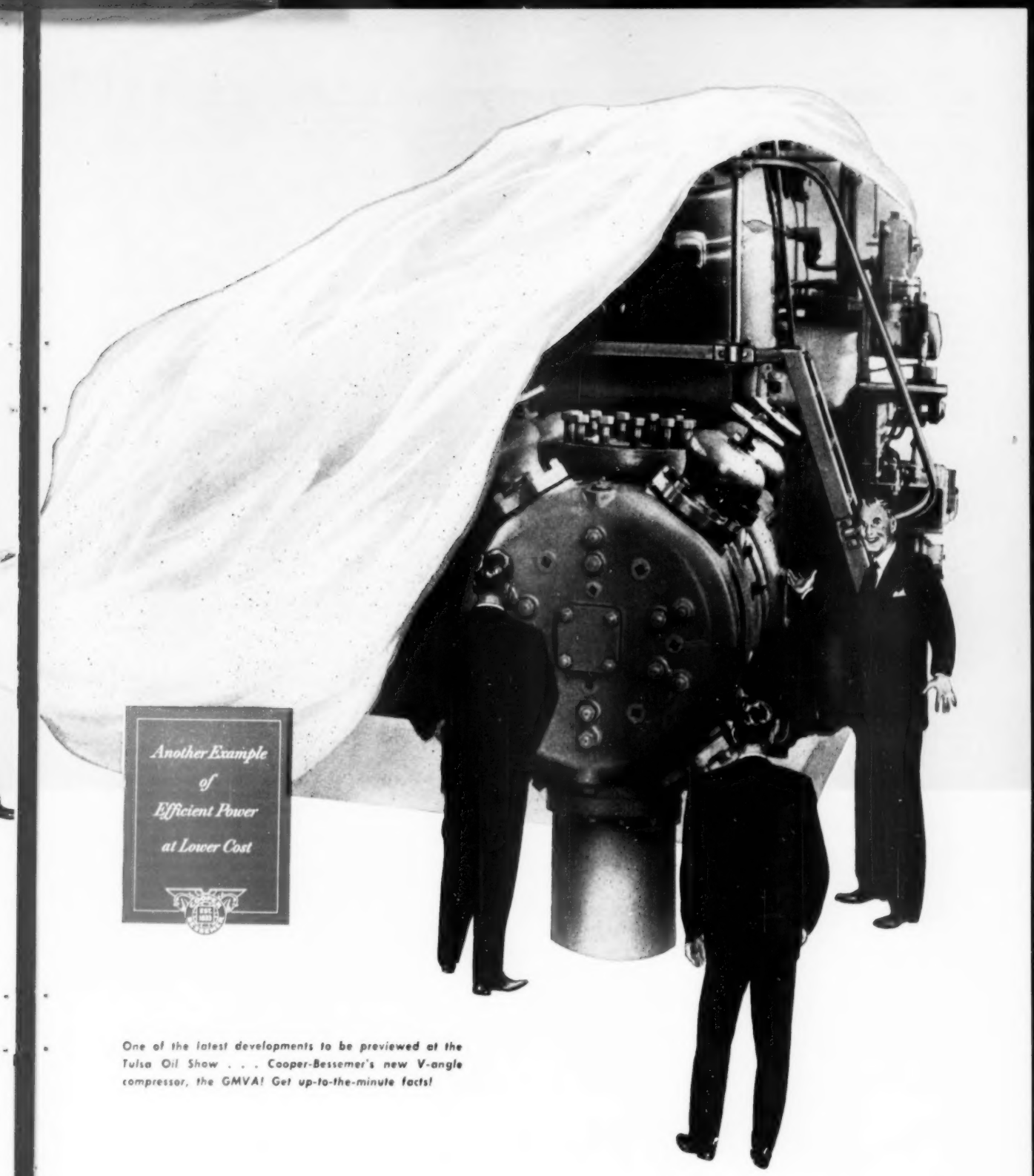
★ **3.** VISIBLE COMBUSTION . . . Did you ever *see* combustion in engine power cylinders? We'll show you *movies* of it . . . taken at, believe it or not, 20,000 frames per second! It's never been done before! It's part of Cooper-Bessemer's development-through-research program.

But even if you're not interested in knowing more about the most remarkable power and compressor developments to date (and remember . . . there's more . . . we can't "jump the gun") . . . drop in and relax as long as you like . . . with the relaxing help of the Southwest's foremost organist entertainer — our favorite Milton Slosser.

COMPRESSORS-GAS ENGINES-DIESELS

New York Washington, D. C. Bradford, Pa.

San Francisco, Cal. Houston, Dallas, Greggton, Pampa and Odessa, Texas Seattle, Wash.



One of the latest developments to be previewed at the Tulsa Oil Show . . . Cooper-Bessemer's new V-angle compressor, the GMVA! Get up-to-the-minute facts!

by **Cooper-Bessemer**

MOUNT VERNON, OHIO AND GROVE CITY, PENNA.

Tulsa Shreveport St. Louis Los Angeles Chicago

METZGER, S. D. COURINGTON, H. H. DAVIS, H. M. DORWARD, JACK DRIGGS, K. N. DRIGGS, R. T. DRY, J. P. HANKS, W. W. LEONARD, Colorado Fuel & Iron Corp.; A. S. RAIRDEN, F. L. BROOKS, E. L. KLINGER, R. P. RAMSEY, Wickwire-Spencer Steel Division; R. F. BOURNE, WILLIAM R. NEWTON, Clayton Steel Products.

This company is making available to visitors at its exhibit space complete secretarial service, which is adequately staffed to write letters, send telegrams, place and receive long-distance calls, and make hotel and transportation reservations. In addition, telephone service is available and an information center is being maintained.

Columbian Steel Tank Co.
Kansas City, Mo.
8 Texas Drive

In attendance

VINCE KUPERSMITH, HAL COOK, W. F. PAGEL, DON DIXON, H. A. BELVAL, F. G. NICHOLS, D. DEBRUNNER.

Recent new developments in two of its products are featured by Columbian Steel Tank Co. New to the company's bolted-tank line is a vinyl plastic coating which is presently being applied to government production. Technical data and sample sections are on display at the exhibit.

A 4,000-gal. Columbian trailerized airport refueler set up with tractor is displayed. Complete performance and technical data on this unit are available.

In addition, an illustrative display incorporates Columbian welded storage equipment and prefabricated steel buildings. A cutaway model of the company's propane storage tanks are also shown.

Columbian Steel Tank Co.'s sectional industrial-type steel building.

Consolidated Western Steel Division
United States Steel Corp.
Los Angeles, Calif.
Block 2
(See United States Steel Corp.)

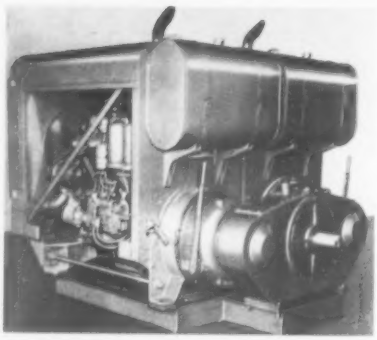
Continental Airlines, Inc.
Tulsa, Okla.
Front of Texas Building

Continental Motors Corp.
Muskegon, Mich.
Block P2

In attendance

C. J. REESE, E. C. GINN, G. W. THOMAS, C. W. JOHNSON, F. F. SCHWILK, PALMER DOLPH, BERT BRANDANA, ED LAWSON, W. J. NEILON.

Approximately 15 representative models, engineered and built to requirements of a wide range of oil-field applications, comprise Continental's exhibit. The display, made



Continental's Red Seal Model RD-572 diesel (compounded).

up of gasoline, butane, and diesel engines and power units, span a range from 39 to more than 350 hp. Cutaway versions, designed to clarify design features, are also being shown. Heavy emphasis is being given compounded units.

Besides liquid-cooled industrial models, Continental is showing the horizontally opposed, air-cooled, aircraft engine which powers the new Cessna 180, all-metal, four-place job.

Continental Products Corp.
Odessa, Tex.
105 Texas Building

In attendance

JOHN J. SIMS, DAN HEMPHILL, RAY GILLES, RALPH NELSON, GEORGE STONEMAN, E. R. ARCHAMBEAU.

Continental is showing its Alkalinity Control Cabinet, a makeup-volume responsive-acid feeder for cooling-tower water, plus its Dealkalizer, an anion resin column for removal of bicarbonate alkalinity in cooling-tower and boiler-makeup water, along with its line of water-testing equipment.

Continental Supply Co.
Dallas, Tex.
Blocks 6, 7, 8

In attendance

R. L. COLLIER, D. G. WEEKES, T. H. FRASER, F. J. MARTIN, MARVIN CRUDUP, J. J. KOVACH, W. T. HAYS, J. E. GALLIAN, G. R. PIKE, C. G. COOK, J. E. KEFFER, H. W. DOUTHITT, C. A. ROSS, R. L. PEBWORTH, J. B. PATTERSON, A. B. BERRYMAN, BOB R. COX, W. C. TRUE, W. M. WRIGHT, R. D. HOOVER, W. R. EVERETT, N. K. KELLER, C. L. COONROD, J. R. NELSON, JERRY SILHAVY, G. H. BOLES, R. A. BREWER, J. A. McCREERY, D. A. MASSIE, RALPH E. GOSA, J. B. CREWS, WADE FARRAR, JR., W. O. BEGLEY, M. F. MISEJKA, BILLY G. LINDSAY, O. A. KENT, W. H. LONG, C. K. TREASE, E. C. SHOEMATE, J. A. WILLIAMS, G. W. HICKS, JR., M. M. MARSTRAND, J. L. AGEE, H. W. PRINGLE, W. A. PRATT, JULIO ZUMETA, C. J. DE LAY, A. P. LACEY, W. G. FITZPATRICK, J. I. McQUIDDY, R. G. SEIM, T. F. MORTON, F. E. PRESSER, B. C. PROWELL, G. H. SLACK, O. C. DAVIS, L. C. COMBS, W. R. COOPER, O. S. FRY, CHARLES H. FISCHER, W. W. HARVARD, I. H. METCALF, J. W. LOWREY, W. D. WILLIAMS, J. R. CHAPMAN, S. H. SHOCKLEE, D. D. DUMAS, C. E. YOUNG, F. E. SMITH, E. B. BREWER, JR., W. H. DARBY, J. D. CRADDOCK, L. C. JUDY, B. L. HINDMAN, J. R. OSTEEN, G. W. BIGHAM, J. A. BUEHRER, W. M. BLAXTON, B. C. BEESON, L. L. WINTERS, E. N. WOOD, F. M. MAYER, F. I. BRINEGAR, D. M. BAILEY, J. A. MUSALER, W. J. MORRIS, C. N. SWANSON, R. E. F. SCHMID, C. L. VICKERS, A. A. DUNAWAY, B. W. CAIN, C. E. DURLEY, JACK A. DAVIS, J. A. WHITESIDES, ODUS TUBBS, J. C. SLONNEGER, R. E. SCHEIBEL, R. R. LEWIS, A. J. MUELLER, JOHN SPENCE, R. C. SMITH, T. H HERATY, B. P. BURRAGE, H. J. McMANN, L. L. BALLEW, G. W. POOL, D. H. CAVINS, W. L. ELKINS, CLAUDE E. MISEL, ELZA McBRIDE, W. M. GOLDEN, L. Z. BOLDING, V. J. PRESTON, G. E. JENNINGS, I. K. COOPER, H. L. COOK, J. E. ZEIGLER, N. A. FORTUNE, R. O. HAMBRIC, H. K. HANN, J. L. POWELL, R. E. WRIGHT, C. A. ROBISON, R. L. HANDLEY, M. G. BROOKS, VAN G. MOORE, JAMES H. GUNTER, J. A. VOGLE, FLOYD R. JOHNSON, W. G. CHAPMAN, RALEIGH HORTENSTINE, JR., N. A. ENDICOTT, E. A. DUNN, W. G. SHARP, DAN STEVENS, D. P. DAVIS, D. F. BELL, GEORGE P. DALEY, H. A. LEE, R. A. GENTRY, E. F. FRAMES, E. W. LONGMIRE, R. F. GREGG, P. W. PARKER, S. A. BATES, A. J. OLSON, E. E. TYER, W. E. YOUNG, C. G. CUTHBERTSON, N. D. LANE, E. D. LAWRENCE, Continental Supply Co.; J. H. BASCOM, J. J. SIEBER, K. B. BRITT, GEORGE T. BORN, L. R. SAUNDERS, Broderick & Bascom Rope Co.; ORA C. COX, Clayton Mark & Co.; W. T. POWELL, W. C. KINDER, J. T. TUCKER, A. H. MILLER, Emsco Manufacturing Co.; J. A. CONLON, W. A. LINFORE, PAUL BRADEN, H. H. BABER, New York Belting & Packing Co.; GEORGE McCUSKEY, L. E. WALLACE, R. A. CURL, J. P. DE HETRE, KARL PETTERS, C. T. McCLURE, J. C. SIEGEL, Youngstown Sheet & Tube Co.

Continental Supply is showing 20 major equipment items exclusive of its indoor display.

Emsco Manufacturing Co. and Continental Supply Co. are showing the smallest of Emsco power rigs. This single-drum rig is a companion to Emsco's double-drum unit. Both rigs are designed for shallow drilling, workover jobs, or for servicing. Another Emsco rig, largest of its G-Series, is also shown. This rig can be flat set or single-stepped and is shown single-stepped on a portable drilling mast. In moving the single-step, two-package rig, only the draw works has to be removed from its pedestal.

A new line of Emsco L-Series swivels is being displayed and from smallest to largest, these swivels are identical in design. Weight of the new swivels has been materially reduced over that of former models of like capacity. Height also has been lowered and hook clearance increased.

Emsco's R-Series traveling blocks are being introduced at this joint exhibit. The R-Series blocks are narrower than the former slim-lined models, have a low center of gravity, and are identical in design and proportions from the smallest to the largest.

The new Emsco A-Series open-face mast on display is a four-legged portable job that can be assembled at ground level and raised into position using only power from the draw works. The mast and substructure are designed as a unit to be moved in one piece on auxiliary wheels or tracks. For longer moves, the mast may be transported as a unit or it can be nested in sections.

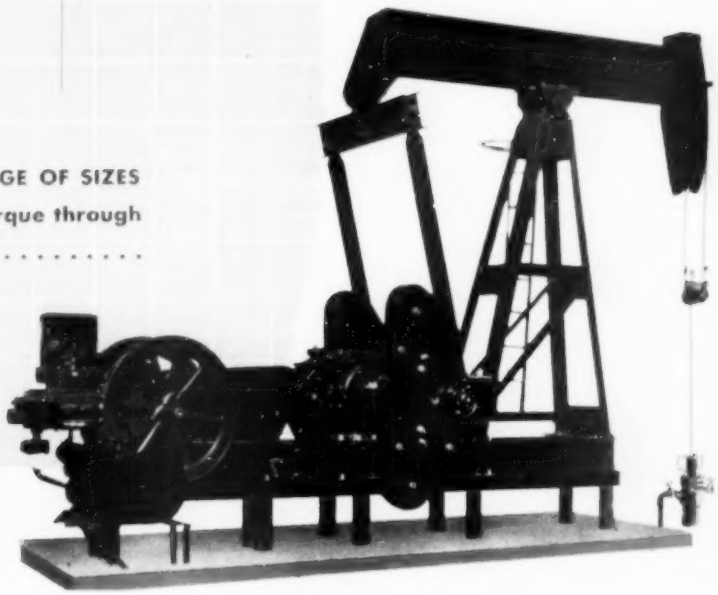
Emsco's redesigned pumping units feature new structurals, new equalizer suspension, and new gear box. The samson post is four-legged, derrick-type, with widely spaced and rigidly braced legs. The new pumping units retain Emsco's wing-type counterweights.

Also shown outside of Continental Supply

finest in the Field!

PUMPING UNITS

AVAILABLE IN A RANGE OF SIZES
from 61,500 Peak Torque through
177,000 Peak Torque . . . . . .



These design features assure years of trouble-free operation . . . . . .

GEAR BOX — continuous tooth herringbone gears — proven quality roller bearing thru-out — maintains exact centers trough type lubrication — positive — no stop-ups. Oil reservoir for each bearing — no dry starts — large shafts — minimum deflection.

COUNTER BALANCE:

SMALL UNITS — combination adjustable beam and optional fixed crank weights.

LARGE UNITS — crank balanced — optional economical filler weight type or adjustable type with unique ratchet adjustment feature.

STRUCTURAL COMPONENTS:

SAMPSON POST — four legged braced for rigidity.

BASE — optional elevated gear box for floor clearing cranks.

WALKING BEAM — heavy CB beams — adjustable for alignment — loaded for max. strength.

PITMAN & EQUALIZER — pinned connections for true equalizing action.

HORSEHEAD — rocker connection with beam for alignment. Easily unlatched from beam and polished rod for well servicing clearance.

See our exhibits at the Oil Show — Booths 28-29 California Building
Outside Booth on Texas Drive

UNITED SUPPLY

AND *Manufacturing* COMPANY

TULSA, OKLAHOMA

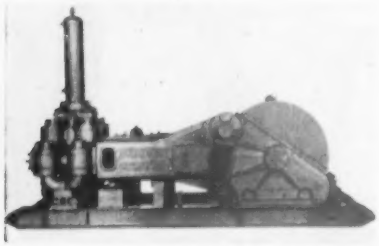
Stores in: KANSAS, OKLAHOMA, TEXAS, LOUISIANA, AND NEW MEXICO

COURTESY • SERVICE • DEPENDABILITY

Co.'s exhibit building is a new design Gardner-Denver mud pump. Among the new design advances incorporated into this unit are double-helical gears; one-piece, eccentric rods, interchangeable, right or left; fluid cylinders, screwed valve covers; and screwed-type, stuffing box glands. Size of the unit on display is 7½ by 18 in.

Continental Supply is showing its new engine starter. This unit can be equipped with air-cooled engine or with battery motor and has a positive friction drive. All bearings of the started mechanism are oilite bushings and require no lubrication. The motors are lubricated in the usual way.

Inside of Continental Supply Co.'s building are exhibits of Broderick & Bascom Rope Co., Clayton Mark & Co., New Bedford Cordage Co., Lunkenheimer Co., New York Belting & Packing Co., D + B Division, Emsco Manufacturing Co.



Gardner-Denver 7½ by 18-in. mud pump displayed by Continental Supply Co.

Cook Electric Co.
Chicago, Ill.
17 Kansas Building

In attendance

C. J. KREMER, JOHN SCOGGAN

A group of cross-sections of expansion joints and bellows is being shown by Cook Electric Co. Included are 150 and 400-lb. series, stainless steel; Series 25 copper bellows; Series 55 monel bellows; and packless, valve bellows, cross-sections. Also a number of complete products which include a double-end anchor joint, special fabricated aircraft assembly and special jet plane bellows are displayed along with a series of pressure switches for use in industrial and aircraft applications. Literature and catalogs are available explaining the products and engineering services of the Magnilastic Division of this company.

These expansion joints are manufactured in both small and large sizes. The display mainly shows expansion joints that are designed not only for use in process systems but may be applied to thermal-expansion problems in any type of piping of natural byproduct lines, water and steam systems for production requirements, plant heating, and refrigerating systems.

C. Lee Cook Manufacturing Co.
Louisville, Ky.
51-52 Texas Building

In attendance

C. J. KREMER, JOHN SCOGGAN

The featured item at this exhibit is the new Cook "Super-Flex" oil-control ring which incorporates a new coil-peripherial-compression-type expander giving the ring improved wiping efficiency and maximum drainage.

Other items shown are Cook's split-case and annular-cup packings for compressors, oil bulkheads, scavenging pumps, steam engines, and double-acting diesels; plus piston and packing rings made of Cook graphitic iron, Cookmet (bronze), babbitt, Cookroc (Bakelite) and carbon.

Cook Super-Flex oil-control piston ring.

Fred E. Cooper, Inc.
Tulsa, Okla.
Blocks A3, B, D

In attendance

J. W. ALLEN, L. M. GASCHE, H. R. KRAMP, E. E. EVERSON, E. A. WOOLBERT, K. P. FLETT, I. W. ALEXANDER, D. N. BLACKBURN, D. M. BLAIR, HARRY FARMER, D. N. FINK, J. D. McKAY, C. F. NELSON, H. L. RASMUSSEN, C. V. SMALL, D. L. THRASH, G. B. WHITE, R. L. COOPER.

Featured at this exhibit are a telescopic, derrick-type mast and four new additions to the company's winch line. One of the new winches is rated up to 400 hp. input. Two other new units range up to 200 hp. and are self-propelled. Air-operated controls are engineered into these three larger models which are for use in the deeper fields. The fourth new unit, compact and light in weight, is designed for servicing wells up to 2,000 ft. Weight and size of this unit permit moving it with light truck or heavy pickup.

A wide range of mast equipment for use

Self-propelled double-drum servicing unit powered by diesel engine.

with the various Fred E. Cooper winches is also being shown. For hanging rods in triplets and racking tubing in doubles, an 87-ft., twin-pole, telescopic-type pipe mast is being shown. Ratings on Cooper's telescopic, derrick-type masts run to 94 ft. in height and hook-load capacities up 200,000 lb.

Cooper-Bessemer Corp.
Mount Vernon, Ohio
Block G

In attendance

GORDON LEFEBVRE, H. A. GEHRES, S. E. JOHNSON, SR., C. M. REAGLE, M. C. POLLOCK, R. L. BOYER, A. A. BURRELL, C. G. COOPER, B. L. POTTER, J. W. REED, L. F. WILLIAMS, E. S. BUDD, S. E. JOHNSON, JR., HAROLD WHITE, O. W. YATES, C. J. HOLLIS, A. B. WHITE, H. L. NIEMANN, B. G. NICKS, C. N. HANSON, C. M. BOVARD, C. J. HAVEKOTTE, A. A. ALBRIGHT, C. L. WHITE, F. M. DEVIN, R. L. REYNOLDS, C. D. LYBARGER, F. A. GEHRES, R. F. KYMER, W. H. PHILLIPS, T. M. LAMBRETH, J. R. HOLLOWAY, C. KELLY, C. WILLIAM GILCHRIST, E. C. PHELPS, R. F. BARTLETT, H. E. SCAGGS, A. W. ABEL, JR., W. N. KRUG, B. E. PERRY, R. H. DALE, J. E. LEWIS, GEORGE WHITE, W. F. DECKER, D. E. BIRD, E. P. MARTIN, C. H. SANDERS, T. O. KUIVINEN, H. C. TINDEL, A. K. DE FRANCE, O. W. STANLEY, DICK WHITE, T. E. KRANER, HAROLD JOHNSON, KARL STABB, D. M. SALIS, E. FREDERICK, G. W. EDICK, J. H. SHIELDS, R. L. ADAMS, R. S. BOWIE, R. P. RAMSEY, C. J. MICHELSON, G. C. WOODARD, F. L. FRIEDLI, R. H. SCHLOSSER, D. L. GALLOGLY, J. S. ALCORN, L. B. KETNER, R. M. BONE, JOHN FULLEMAN, R. W. P. JOHNSON, A. W. SHICK, W. R. CROOKS, C. W. WOLTZ, S. M. EVANS, C. L. McDOUGALL, E. G. GAHAGAN, H. K. STEVENSON, E. R. BONNIST, GEORGE C. AVERILL, LLOYD L. JONES, GEORGE MURDOCK, R. G. WILLIAMSON, JOHN ROGERS, J. W. METTLING, W. S. ARTHUR, C. R. JONES, R. A. DARLING, M. S. KENADY, R. E. HENSLEY, C. R. HARTMAN, R. H. HUMPHREYS, J. C. HELLNER, C. E. NEARY, J. M. STORY, R. L. SMITH, W. M. RAPER.

Ultrahigh speed motion pictures, taken of actual fuel combustion inside an internal-combustion-engine cylinder, are being shown at Cooper-Bessemer's exhibit. These motion pictures were taken at 20,000 frames per second to reveal heretofore unknown characteristics of different fuels burning within an engine cylinder. Engineering analyses of these pictures have indicated the way for improving the design of engines and compressors for more efficient operation.

Made public for the first time are advancements in gas-engine-driven compressors. These advancements are depicted by the new Cooper-Bessemer GMVA unit, only recently announced to industry, produces 30 per cent more power than its running mate, the GMV unit, yet operates at 10 per cent greater fuel economy and with less heat load.

Of particular interest is a demonstration wherein hand rotation of the huge crankshaft of a Cooper-Bessemer GMVA compressor may be made by anyone.

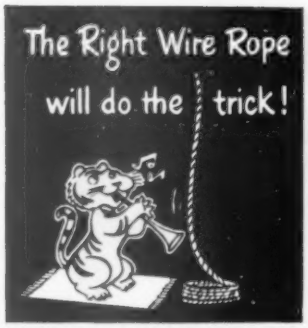
C-O-Two Fire Equipment Co.
Newark, N. J.
38 Oklahoma Building

In attendance

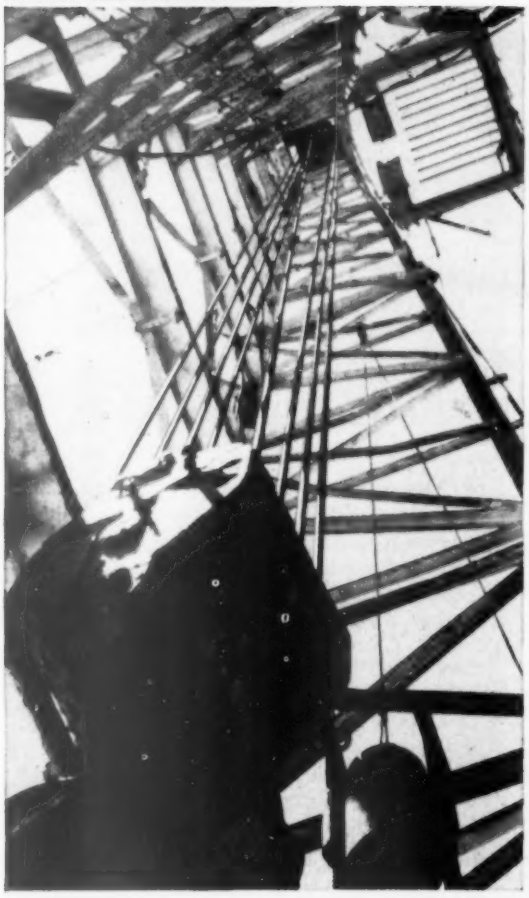
MAYNARD A. LASWELL, FRANK B. ALLEN, HAROLD J. BURKE, FRANK F. JAEGER, BURR WILLIAMSON, HERBERT W. HASS.

This firm is featuring its new improved 150-lb. dry-chemical portable unit. This new

C-O-Two 150-lb. dry-chemical portable fire extinguisher.

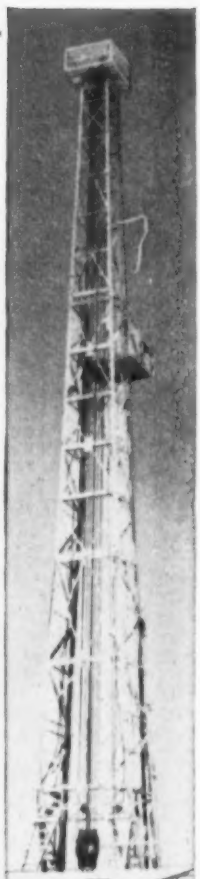


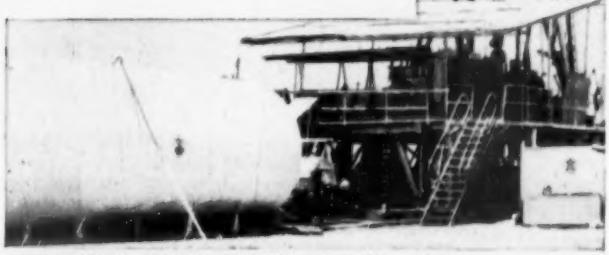
"American Wire Lines out-perform any others we have used."



That's Bruce Harp talking— West Texas Drilling Superintendent for Exploration Drilling Co. Here's what he says about American Tiger Brand Wire Lines: "We keep accurate ton-mile records and we know what each one of our lines has done. We've used almost every kind of wire rope there is, but I'll say that American Lines give us the best service of any."

American Tiger Brand Wire Lines give long service because they are especially designed for tough oil drilling service. Tiger Brand Rotary Drilling Lines and Cable Tool Drilling Lines, Sand Lines, Coring Lines, and Winch Ropes provide the strength and wear resistance for every type of drilling job you have. And the American Wire Rope Engineer in your area will be glad to help you choose the ones that will work best on your rig. Just get in touch with the nearest American Wire Line Distributor.





EXPLORATION DRILLING CO.'S Rig #16 is equipped with 8450 ft. of 1¼" American Tiger Brand Drilling Line, which has an Independent Wire Rope Core and is preformed for better spooling and greater resistance to bending fatigue.

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION, GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

U·S·S AMERICAN TIGER BRAND WIRE ROPE

Excellay Preformed

UNITED STATES STEEL

UNITED REFINING COMPANY marks its

50th Anniversary

...with a Blaw-Knox "Catforming" Plant

In line with its 50-year policy of using the latest refining techniques in the manufacture of premium quality products, United has commissioned Blaw-Knox Company, Chemical Plants Division, to design and construct a "Catformer" plant at their Warren, Pennsylvania refinery.

The Atlantic Refining Company "Catforming" process is an economical means for up-grading low grade naphthas to high octane gasoline at 95-100 per cent yield. The catalyst is selective and rugged; the yield-octane relationships are well established by pilot plant evaluation of numerous stocks; and commercial operations have confirmed basic design features.

Chemical Plants Division is licensed to offer Atlantic's "Catforming" process and would be pleased to discuss product yields and qualities, plant investment and operating costs with you. "Catforming" offers an economically attractive solution to your octane problem.

BLAW-KNOX COMPANY
CHEMICAL PLANTS DIVISION
Pittsburgh 22,
Pennsylvania

BLAW-KNOX

fire extinguisher is designed with maneuverability for indoor or outdoor service and is effective on flammable liquid, gas, and electrical fires, as well as surface fires involving ordinary combustible materials. The unit carries an unconditional B, C rating by Underwriters' Laboratories, Inc.

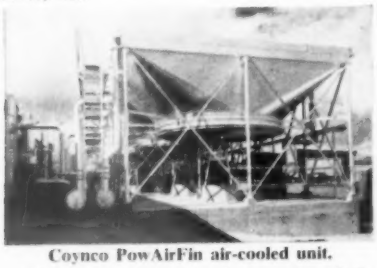
In addition to featuring this new item, C-O-Two is showing its latest model Squeez-Grip carbon dioxide-type, hand-portable fire extinguishers, as well as its latest-model dry-chemical-type hand-portable fire extinguishers.

F. H. Cox, Mall Tool Co.
Jenks, Okla.
39 Kansas Building

Joseph A. Coy Co.
Tulsa, Okla.
63-64 Scientific and Technical Building

In attendance

JOSEPH A. COY, A. H. McELROY, J. E. MAYDEN, GLENN ALLDREDGE, J. S. KONE, M. H. ROTHS, GLEN TAYLOR, JR.



Coynco PowAirFin air-cooled unit.

Company is featuring photographs of the three major types of heat-exchange equipment it manufactures for the petroleum industry. Included in the Coynco line are PowAirFin air-cooled units, Stratube atmospheric sections along with shell-and-tube heat exchangers. Photographs also show the step-by-step growth of Coynco manufacturing facilities.

Crane Co.
Chicago, Ill.
196-197 and 254-255 Oklahoma Building

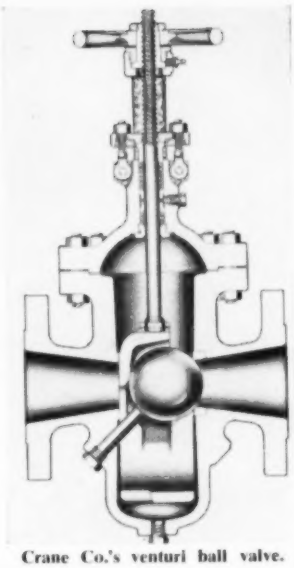
In attendance

F. F. ELLIOTT, J. A. DWYER, F. J. WILKEY, J. W. GREENE, R. A. HENDRICKSON, J. A. McMURRY, A. H. HAHN, R. G. HUNTER, VERNE KORNHAUS, GEORGE CAVANESS, SAM ROSE, W. C. FRAZIER, T. S. JONES, H. W. MORGAN, H. L. HANNA, E. H. CLARK, H. E. McCLAIN, TED KLENDA.

Feature of this exhibit is its new line of Class 600 cast-steel, pipe-line gate valves. These grease-packed, double-disk gate valves are "conduit" type and are suited for oil or gas piping generally, at atmospheric temperatures.

A new line of valves, operating on a unique principle, is also being shown. The disk in these Crane-Paul valves, instead of being of conventional shape, is a ball. The ball is not attached directly to the stem, but rides in a cage which is attached to the stem by a tee-head slotted construction. In operation, the ball is moved to and from the center of flow and rolls into and out of the body seat. The ball disk is mechanically locked in the closed position by a wedging member of the cage. In moving to the fully open position, the ball rolls out of the seat and up, until it is lined up vertically with the stem and is carried out of the path of flow.

Crane's exhibit of pipe-line gate valves includes a 2½-in. valve with its body quarter



Crane Co.'s venturi ball valve.

sectioned, plus an 8-in. valve with an opening in the body to illustrate its operation, and a sectional view of a 16-in. valve, animated to demonstrate its operating principle.

Also shown are Crane's line of compact 600-lb. small steel valves for oil field and refinery service, along with a 4-in. Crane-Paul valve, sectioned to show action of its ball-type disk, and an animated sectional view of the Crane-Paul valve illustrating the different positions of the ball-type disk.

Crane Packing Co.
Chicago, Ill.
17N-18N North Area

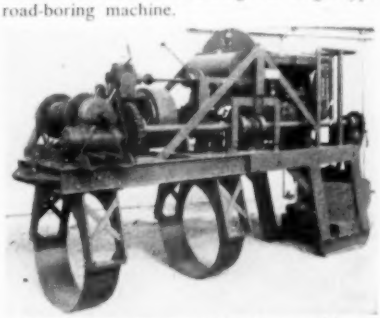
Cronkhite Automatic Products
Tulsa, Okla.
23 Silver Lane

M. J. Crose Manufacturing Co., Inc.
Tulsa, Okla.
Block 116

In attendance

M. J. CROSE, MICHAEL CURRAN, J. W. BRAND, J. H. MANLEY, J. M. CHANCE, M. J. Crose Manufacturing Co.; T. J. BEHRENFELD, Pipeline Supply Co.; D. T. O'CONNOR, Crose Pipeline Equipment Co.; R. W. MUSSER, Pipe Line Anode Corp. and Magnesium Division of M. J. Crose Manufacturing Co., Inc.; YALE TITTERINGTON, HUGH BRADY, Pipe Line Anode Corp.; HARTLEY DAVIS, Magnesium Division of M. J. Crose Manufacturing Co., Inc.; TOM CURRAN, NORMAN WOOD, Crose-Curran, Inc.; C. H. PARDEE, Crose-Curran, Ltd.

M. J. Crose is featuring its auger-type road-boring machine.



Crose auger-type road-boring machine.

I.P.E. EXHIBIT DIRECTORY

Crutcher-Rolfs-Cummings, Inc.
Houston, Tex.
Block 115

In attendance

L. W. BOGGS, C. E. HATCHER, BILL DAVIDSON, BILL WAGNER, G. H. OSBORN, A. S. CRUTCHER, J. D. CUMMINGS, I. W. McKINNEY, G. C. SWARTZ.

Manufacturer of a specialized pipe-line equipment, Crutcher-Rolfs-Cummings, Inc., is exhibiting various items. Included in the showing is a recently developed, hydraulic-powered middle-incher ditching machine with a torque-converter drive. This ditcher cuts a 46-in.-wide ditch to a maximum depth of 7½ ft. Crutcher-Rolfs-Cummings' recently completed 36-in. smooth-pipe-bending machine is also shown. This new machine smooth bends thin-wall pipe ½° per foot without use of heat.

Also displayed is one of the company's dope kettles with propeller and sweep agitation. This kettle is provided with special insulation and positive, plug-type, shutoff valve.

Cummins Engine Co., Inc.
Columbus, Ind.
Block 201

In attendance

C. R. BOLL, C. B. FOSTER, P. J. EVERY, R. D. HICKS, J. T. WEBER, G. W. STEVENS, R. S. DOXSEY, L. E. WILLIAMS, A. L. HERRON, C. J. WILHITE, G. H. WEAVER, J. DEL TORO, L. E. CARR, E. C. DURBIN, G. J. MORELAND, H. E. BAKER, J. A. ARDINGTON, T. J. PAXTON, G. L. BEGO, W. M. STEED, J. W. ROWELL.

For the first time anywhere, Cummins Engine Co., Inc., is displaying its powerful, lightweight, high-speed diesel engine. The display is a cutaway version of the new diesel.

Known as Cummins' Model VT-12, the engine develops a maximum of 600 hp. at 2,100 r.p.m. A turbocharged version of Cummins' 550-hp. unit, the new engine is equipped with a Roots-type supercharger driven by waste gases.

In addition to its VT-12, Cummins is showing a 150-hp. cutaway and a 300-hp. cutaway. Other standard engines shown include a 315-hp. gas engine, a dual unit compounded for oil-field service; a 100-hp. marine engine; a 60-kw. generator set, and a 200-hp. power unit. Special parts displays are also incorporated in the exhibit.

Cummins Sales & Service, Inc.
Fort Worth, Tex.
Block 3

W. H. Curtin & Co.
Houston, Tex.
56 Scientific and Technical Building

In attendance

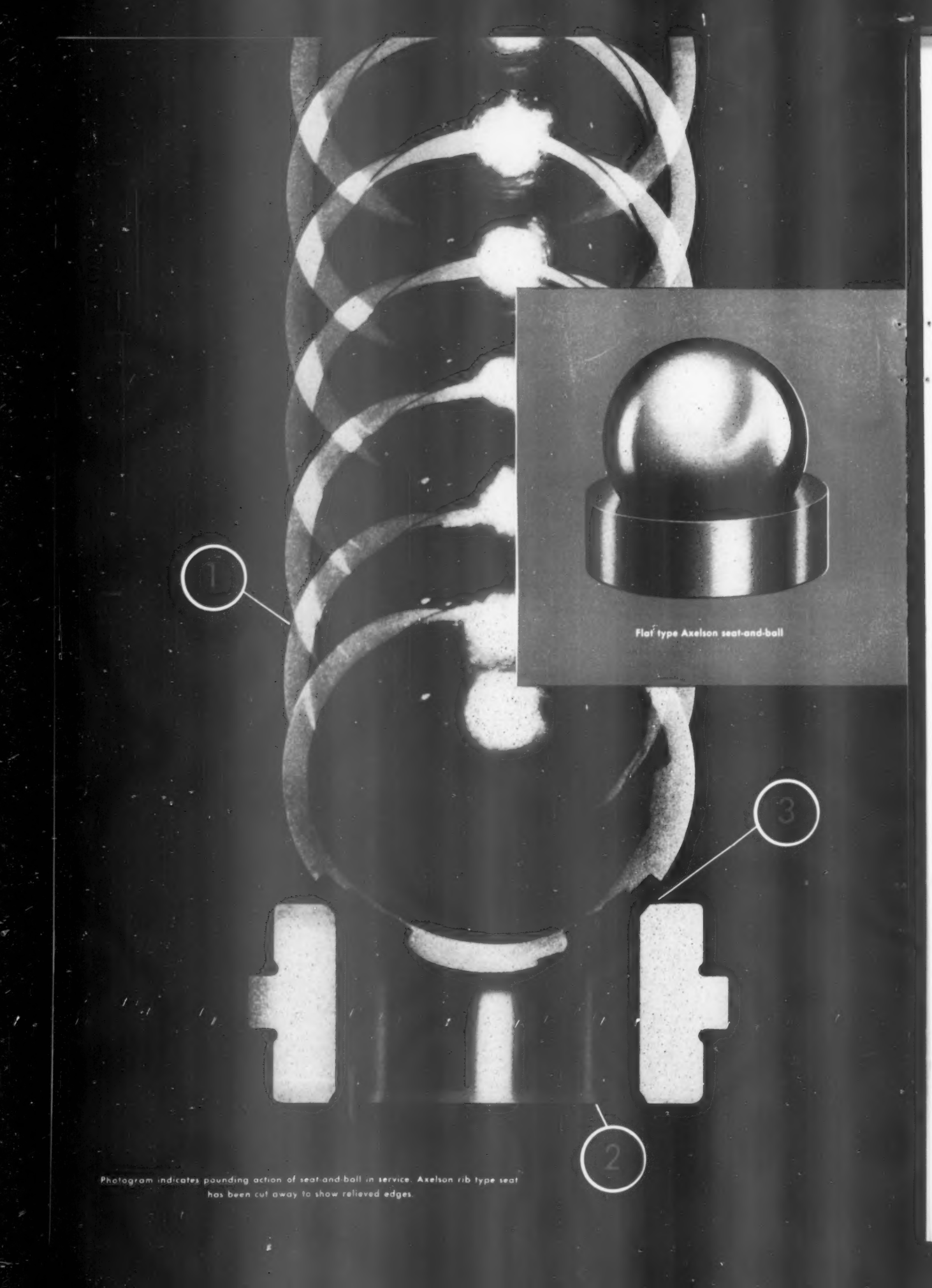
FRED SCOTT, AL HERBERGER

W. H. Curtin & Co. is showing a new, International , oil-testing centrifuge which operates from an automobile storage battery and a precision, front-view distillation apparatus with new Lo-Cap electric heater, plus a Beckman Aquameter along with Pyrex "Double Tough" glass pipe and fittings.

Dailey Oil Tools
Houston, Tex.
Block 104

In attendance

R. R. LAWRENCE, MILTON BARRETT, HAROLD J. SCHNEIDER, FRANK SPIT-

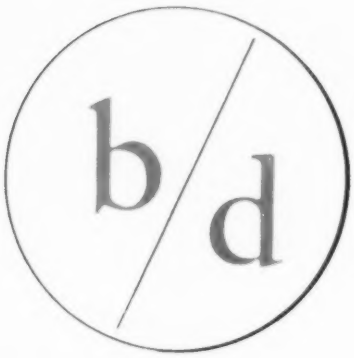


Flat type Axelson seat-and-ball

Photogram indicates pounding action of seat-and-ball in service. Axelson rib type seat has been cut away to show relieved edges.

We are looking forward to seeing you at our exhibit, International Petroleum Exposition, Tulsa

Increase



with Axelson matched seats and balls

The seat-and-ball is the heart valve of the pump, past which every drop of oil, every abrasive particle must flow — and it must stand up under merciless pounding. There is a difference between the ability of the ball and the seat to resist battering and bending forces.

1. The ball being a spherical mass resists static pressure. Its outer surface, however, is vulnerable to sharp, concentrated blows that tend to cause pitting and spalling off, unless, as is the case in the Axelson seat-and-ball assembly, careful design prevents the concentration of shattering blows.
2. The seat is vulnerable to distortion. Hoop-shaped, its masses are spread, its defense against bending thinned. But, being a hoop, it has more resiliency than the ball. Sound design seeks a proper distribution of bending and shattering forces, between seat and ball. Its aim is to minimize distortion in the seat and provide maximum cushioning for the ball. Axelson successfully accomplishes this by a scientific determination of the best seat diameter for each ball.
3. Axelson goes an important step further; both edges of the mating surface are relieved. This prevents formation of burrs under the pounding action of the ball, protecting the seat from fluid cutting, the ball from sharply concentrated pitting forces.

At Axelson, seat-and-ball is one word. This assembly becomes a matched pair, vacuum tested as a matched pair and packaged in a sealed container as a matched pair. The *extra quality* built in is worthwile production insurance — for the end result means more Barrels per Day to the operator.

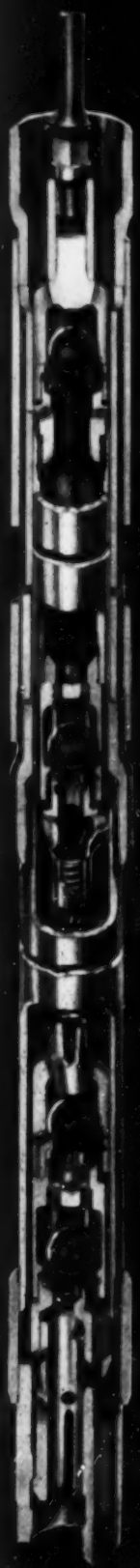
AXELSON PETROLEUM PUMPING EQUIPMENT

Chosen first . . . to last

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

AXELSON MANUFACTURING COMPANY — Division of Pressed Steel Car Company, Inc. • PLANTS — Los Angeles 58, California; St. Louis 16, Missouri. • OFFICES — New York City 7, New York; Tulsa 1, Oklahoma; Buenos Aires, Argentina. • DISTRIBUTORS — Jones & Laughlin Supply Co.; Industrial Agencies Ltd., San Fernando, Trinidad, B. W. I.; Industrias Waldrip & Campbell, Barcelona, Caracas and Maracaibo, Venezuela; South American Supply Co., Ltd., Lima, Peru; Sociedad Comercial de Materias Primas Limitado, Rio de Janeiro, Brazil; G. Saavedra e Hijos, S. de R. L. Avenida Morelos 31, Mexico, D. F.; Dominion Oil Field Supply Co., Ltd., Calgary, Canada.

PR 22



AXELSON "TLE" TUBING LINER TYPE
There is an Axelson deep well plunger pump for every specific well condition.

ZENBERGER, JR., W. W. SMITH, W. L. FRANKLIN, E. A. GRUVER, C. E. MOORE, J. P. DOUGHERTY, CARL GRUBENMAN, ERNIE MEYNIG, R. R. LAWRENCE, JR.

Dailey Oil Tools is exhibiting a complete line of its cutting and fishing tools. Featured is a hydraulic pulling tool and a line of mobile high-pressure pumping units recently added to its list of services.

A demonstration of the hydraulic pulling tool, which has a pulling capacity range between 160,000 and 360,000 lb. depending on size, is an interesting part of this exhibit. The pumping unit powering the hydraulic pulling tool uses Gardner-Denver equipment tested for 7,000 psi.

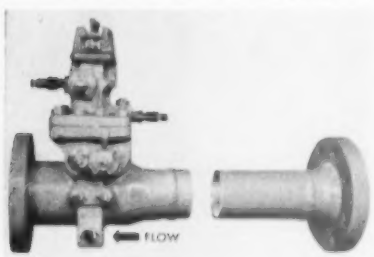
Daniel Orifice Fitting Co.
Los Angeles, Calif.
39-40 Scientific and Technical Building

In attendance

F. N. DAVIS, BILL WATSON, RON WILSON, JACK CORZETTE, GLEN DANIEL, J. V. MOORE, W. A. GRIFFIN, RALPH CLEMONS, WALDO WILBERN, BILL HENRY, CARROLL COX, M. L. FREUDENTHAL, PAUL PIRKLE, JOHN WHALEN, JOE HOLDENRIED, FRANK HOLLAND, PAUL DANIEL.

Company is displaying its complete "Flangnek-Senior" orifice-fitting and meter-run combination. This newest Daniel product prevents misalignment and other possible errors in field installations. The upstream tube is welded to the fitting by a special factory process which provides positive alignment of tube and fitting, plus a smooth internal weld joint. The flanged fitting outlet, with a flange at the outer end of the upstream tube permits quick, easy removal from the line for inspection and cleaning. Accurate alignment of the downstream tube is assured by dowel-pin, flange-alignment holes for 150 and 300-lb. A.S.A. flanges, and by matching made and female faces for all higher A.S.A. ratings.

In addition Daniel is also displaying its 30-in. Senior orifice fitting, Junior orifice fitting, Simplex orifice plate holders, orifice plates and piston controlled check valves, as well as other oil and gas industry products.



Daniel Orifice Fitting Co.'s "Flangnek-Senior."

Darling Valve & Manufacturing Co.
Williamsport, Pa.
113-114 Oklahoma Building

In attendance

M. L. HOUGH, C. H. SIMON, W. D. JAMESON, D. F. SABLE, H. B. FOSTER, M. S. EVANS, H. A. SUMRELL, R. K. GLENN, M. W. HARTMAN, E. R. JONES, R. F. HEATH.

A large, 30-in., motor-operated, pipe-line valve is the feature of this exhibit. Displayed, in addition to the large, cast-steel, double-disk, pipe-line valve, are cutaway models of various valves and one high-pressure hydrant.

Dayton Rubber Co.
Dayton, Ohio
211 Oklahoma Building

In attendance

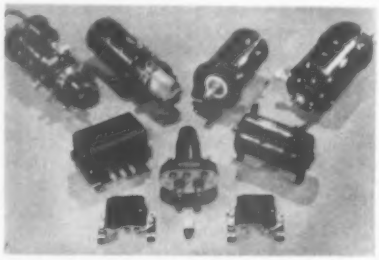
L. C. STROBECK, J. W. TORRANT, M. E. RUNNER, L. J. ADAMS, J. D. HERSHEY, J. R. YOUNG, J. W. RICE, E. C. PARRY, T. R. DOUGLASS, J. G. HENDRICKS.

Dayton's exhibit features general industrial application of its V-belt equipment. Personnel are available to discuss engineering applications of the product.

Delco-Remy Division, General Motors Corp.
Anderson, Ind.
Block 10

Electrical equipment for both gasoline and diesel engines, for application or interest to the oil industry, is displayed. Many of the show models are cutaways, carefully prepared to show clearly the internal construction and operation of these units.

Housed in glass-enclosed compartments are a variety of generators, regulators, cranking motors, ignition coils, ignition distributors, switches, and Delco batteries. Included in the generator group are representative models of the new Delco-Remy alternating current generators recently announced.



Typical Delco-Remy heavy-duty electrical equipment.

Denison Engineering Co.
Columbus, Ohio
29N-30N North Area

In attendance

PAUL W. NORRIS, HOWARD F. LEVENHAGEN, DENISON NEALE, R. H. BASS, JAMES M. GALLANT, ROBERT WILKENS, ELLIS H. BORN, MELVIN G. SULSER.

Three of its products are featured at Denison Engineering Co.'s exhibit. First in the group is the company's Vane-Type pump motor, a single unit in a range of sizes for either pump or motor applications. This hydraulically balanced unit is manufactured in sizes up to 70-g.p.m. or the equivalent of 97 hp. when used as a motor. The units may be operated in either direction of rotation without change or alteration.

Another Denison item is its Multi-Range flow-control valve for 3,000-psi. regulation. The valve is designed to withstand system pressures up to 5,000 psi. and incorporates several maximum ranges of flow control. A single cartridge-type spool is used for regulating the valve's adjustable orifice to fit any pump delivery within its range.

Denison's third product on display is its Axial-Piston, Variable-Volume, Cross-Center reversible pump. Designed for 5,000-psi. service, the pump provides reversible flow operation with variable delivery in either direction of operation. In effect, the unit is a self-contained circuit without valving which provides reversible flow instantly by changing direction of pumping action.

Denison Multi-Range flow-control valve.

Detroit Automotive Products Corp.
Detroit, Mich.
87-88 Texas Building

In attendance

S. F. BAKER, R. H. WILLIAMS, Detroit Automotive Products Corp.; and distributors representatives: E. LEE ELDER, WILLIAM J. BOGGS, RALPH S. MARSHALL, L. B. COLLIER, HAROLD BARRETT, R. L. DAVIES, C. L. McCLASKEY, MARTIN LOWE, MRS. B. M. SLEEPER.

This company is showing a number of its automotive-industry products for oil-country service. Among these products are Thornton Four-Rear-Wheel-Drive trucks, and a Super-Load-Booster third axle for highway tractors. This unit represents a new principle of third-axle construction: By driving the rear axle with the normal-length propeller shaft the third (dead) axle can be located forward to the rear driving axle, thus shortening the tractor wheelbase. Associated with these highway units are three types of traction kits which include a NoSpin differential, an air-actuated Load-Shifter, and chain and sprocket sets.

Detroit Automotive Products Corp.'s NoSpin differential.

The new military vehicle, the "Mighty Mite," is equipped with Automotive Products Corp.'s NoSpin differentials and NoSpin overrunning clutch in the transfer case.

Detroit Diesel Engine Division, General Motors Corp.
Block 10

In attendance

W. T. CROWE, E. F. BENTLEY, L. S.

See these SHAFFER PRODUCTS at the TULSA OIL SHOW

For more than a quarter century the Shaffer name has meant continued leadership in oilfield pressure control equipment, as well as in dependable fishing tools. When you visit the Tulsa Oil Show be sure to see these and other Shaffer Products at our exhibit . . . Booths #1 and #2 in the Oklahoma Building.

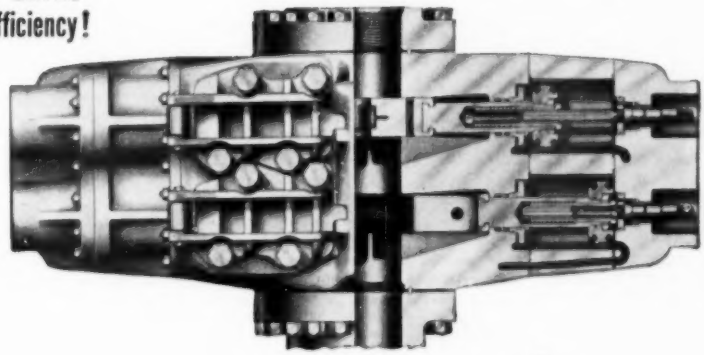
SHAFFER HYDRAULIC CELLAR CONTROL GATES

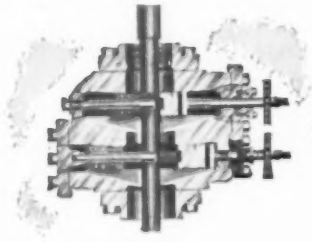
. . . Revolutionary in compactness, simplicity, efficiency!

Available in both Double (illustrated right) and Single types. Both types are amazingly compact—Double type only 30" high, Single type only 18½" high, even in sizes as large as 13⅝" (12" Series 900).

Rams are changed by simply opening side doors, replacing rams, then closing and bolting the doors. *And rams can be changed whether pipe is in or out of the hole!*

With all moving parts completely enclosed, this Gate is ideal for *all* drilling operations. There are many other important advancements built into this Gate, so be sure to get the complete story before you invest in *any* control gate equipment. Available in a complete range of sizes and pressure ratings!





SHAFFER MECHANICAL CELLAR CONTROL GATES

- Available in both Double (illustrated above) and Single types for operation by air, electric or steam drive —*plus complete manual stand-by operation!*
- Require minimum space—less than 29" for Double, 19" for Single, even in sizes as large as 13⅝" (12" Series 900).
- Self-Draining Ram Compartments, with no place for detrimental mud to accumulate and interfere with free ram travel . . . Quick, Easy Ram Changes by simply removing *one* end cover . . . and many other unique features make these gates outstanding in their field.

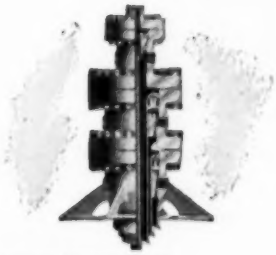
Domestic or overseas, wherever your operations call for mechanically-operated cellar control gates, Shaffer has the most advanced design available!

SHAFFER COMBINATION ROTATING BLOWOUT PREVENTERS AND STRIPPERS

—Combine in One Unit Every Necessary Feature for Complete Pressure Control While Drilling.

- Can be used with *any* standard kelly —square, hexagonal or octagonal; any type drill pipe—coupled, upset or flush. No special strings or equipment needed!
- Maintains continuous seal around pipe, couplings, tool joints, upsets, subs, drill collars, etc. *automatically* —whether string is rotating, being raised, lowered, or is stationary.
- Quick Releasing Bonnet permits lifting bits, reamers, other large-diameter tools through the unit quickly, easily. . . . and many other unique features!

Nothing equals this unit for maintaining complete pressure control while the drill string is in the well. Available in a complete range of sizes.



SHAFFER LANDING HEADS AND TUBING HEADS

—Meet Every Requirement for Modern Compact Casing and Tubing Suspensions The World Over.

- Available in various types and packing arrangements. Base Heads and Combination Base, Casing and Tubing Heads are available for combining several units into one where space is at a premium.
- Shaffer provides a full line of modern Tubing Heads, Multiple Zone Hook-Ups and other equipment to complete your pressure control installation—for conditions anywhere in the world!

SHAFFER ADJUSTABLE FLOW BEANS

—The Pioneer Adjustable Flow Bean that Provides Operating Features Unequalled By Any Other Equipment.

- Available with Conical, Micro and electrically-heated Thermo Tips in both regular and hard metal designs to meet various drilling, production and refinery applications. All popular sizes—in both flanged or screwed connections—to meet your particular requirements.

ALSO, SHAFFER FISHING TOOLS!

In addition to pressure control equipment, Shaffer also provides one of the most complete lines of dependable fishing tools in the industry. Not only all conventional types—but many tools that are unique in operation and purpose. Write for complete information!

See this equipment at the Tulsa Oil Show. Also write for your free copy of the new Shaffer Catalog.

SHAFFER

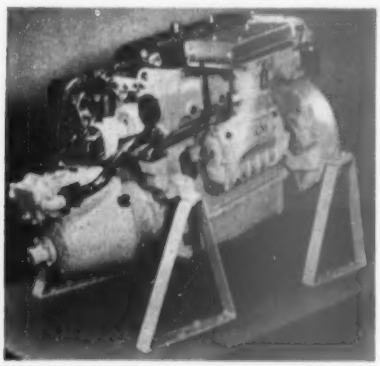
HIGH PRESSURE DRILLING AND CONTROL EQUIPMENT • FISHING TOOLS THAT EXCEL

SHAFFER TOOL WORKS, Brea, California • California Service Shops: Santa Fe Springs and Taft
HOUSTON, TEXAS, 6006 Navigation Blvd. • ODESSA, TEXAS, 1935 West Second Street
OKLAHOMA CITY, OKLAHOMA, Acme Oil Tool Company, 1001 S. E. 29th Street
CASPER, WYOMING, Shaffer Tool Works, Post Office Box 1788
EXPORT SALES OFFICE: Shaffer Tool Works, 500 Fifth Avenue, New York, N. Y., U.S.A.

30 years OF OIL TOOL LEADERSHIP

SHELDRICK, R. V. BAXLEY, A. F. CAMPBELL, A. F. BRECHT, J. C. CAMPBELL, L. A. STEELE, D. H. BRIGGS, K. L. HULSING, F. S. DRISCOLL, D. E. MILLER, E. J. VAN DYK, R. L. BURPEE, M. Q. FULLINGTON, J. W. BROWN, W. W. FOX, G. HELMIG, L. HOLMES, R. HOWE, A. W. ANDERSON, W. R. BAYS, R. A. HILL, C. M. HOWELL, H. K. McAFEE, C. STEWART.

Seven different models of two-cycle diesel engines, four of which are new products, are exhibited. These complete engines are supplemented by three motorized cutaway engine models. The complete engines include a brand-new unit with torque converters and chain-compounded drive along with a torque-converter unit, and a single engine with torque converter. Two new "inclined" marine engines in a hull section, a new marine propulsion unit and a new compact 12½-kw.



New Series 51 valveless marine diesel engine designed for work boats, fishing boats, and pleasure craft of 26 ft. and up.

permanent magnet generator set are also being shown.

The feature attraction of Detroit Diesel's exhibit is its Twin "110" engine. Although a production model, already proven by petroleum field testing, this is its first public showing. Both engines in this unit are provided with "dumping" type torque converters between compound and engine. Compound of the two engines is accomplished with a "high velocity" chain drive instead of gears.

For service in coastal drilling operations, Detroit Diesel is showing two new two-cycle diesel propulsion units which feature compactness and light weight in the marine diesel field. One marine engine is only 31 in. high and, with direct drive, 49¼ in. long. This relatively high-speed marine diesel is a "valveless" engine, with both intake and exhaust ports in the replaceable cylinder liner. A pair of Detroit Diesel's new inclined engines is exhibited in a facsimile, full-scale hull section.

The exhibit occupies approximately one-third of General Motors' exhibition hall in which are also housed exhibits of the Allison, Chevrolet (trucks), Cleveland Diesel, Delco Remy, G.M.C. Trucks, General Motors Overseas, Harrison Radiator, and Hyatt Bearings divisions of the corporation.

Dia-Log Co.
Houston, Tex.
6-7 Silver Lane

In attendance

F. L. SCOTT, JR., LEO A. BELL.

Featured at this exhibit is a demonstration of the "Dia-Log Free Point Indicator" used in determining location of the "free" point in a string of pipe that has become stuck in an oil well. Literature is available describing the operation and method of use of this tool, together with a description of the company's application of the "string shot" in "backing off" or unscrewing such a string of pipe at the free point.

In addition to this display, Dia-Log is showing its casing and tubing survey tools used to determine the extent of wear or corrosion in production strings by accurately gaging the thickness of the remaining wall section of the casing or tubing. In connection with this service a demonstration is being given of Dia-Log's recording instrument which makes a surface record of the findings of the company's gaging tool as it is being withdrawn from the hole.

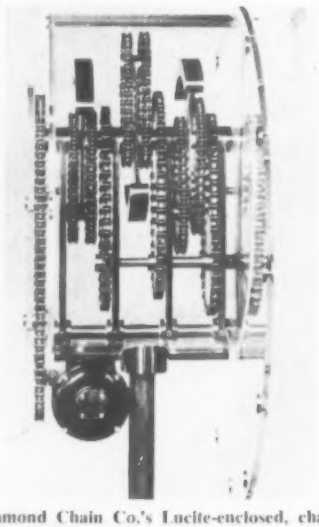
The company is also displaying its new jet casing cutter. This display consists of a full-size tool showing all working parts of the mechanism. Samples of cuts made with this tool in different areas under a variety of well conditions are available for inspection.

Diamond Bit Co.
Dallas, Tex.
252 Oklahoma Building

Diamond Chain Co., Inc.
Indianapolis, Ind.
11-12 Scientific and Technical Building

This company is featuring photographs in color of numerous makes and kinds of roller-chain-equipped oil-field machinery at its exhibit. Included are photographs of drilling rigs, engine compounds, seismograph rigs, servicing rigs, pumping units, and pipe-line machinery. Highlighted are single and multiple-strand American-Standard roller chains, in both standard and heavy series for oil-country service. Chains for other usages are also shown, with straight and bent attachments on both standard-series transmission chains and on double-pitch conveyor chains, and stainless steel chains. Roller-chain-type, flexible, shaft-couplings and aluminum casings are available for inspection.

Diamond's Lucite-enclosed, chain-driven clock which incorporates a reduction ratio of 129,600 to 1 in a series of chain drives, and also two epicyclic or sun-and-planet reductions are displayed.



Diamond Chain Co.'s Lucite-enclosed, chain-driven clock.

Diamond Oil Well Drilling Co.
Midland, Tex.
10 Texas Drive

In attendance

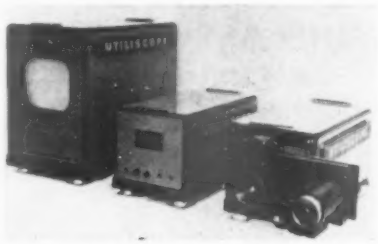
R. W. STUART, J. T. WILLIS, R. H. EVANS, J. S. WOODS, W. H. POTTS, GENTRY ELSTON, FRANK HOWSON, J. B. STEWART, KEN McPHERSON, W. H. POMEROY.

Diamond Oil Well Drilling Co., supplier of diamond coring and drilling equipment, has a second exhibit in the Hall of Science. Featured items shown by Diamond are concave diamond drilling bits plus cutaways of drilling sub and diamond drilling bit along with another cutaway of diamond core barrel. Displayed are formational cores cut with diamond bits, diamond core bits, raw diamonds, molds, and diamond-bit-manufacture procedure.

Diamond Power Specialty Corp.
Lancaster, Ohio
3N North Area

Featured is the company's "Utiliscope," industrial-type wired television equipment. A special television camera, plus power unit and viewer, or monitor, interconnected by coaxial cable comprise the remote viewing system. Operation of this system requires no F.C.C. license since no signals are actually radiated.

Several other "Utiliscope" devices are at the exhibit. One of them is a recently de-



Diamond Power Specialty's industrial television equipment.

veloped miniature TV camera. Several viewers are in operation so visitors, standing before a camera, can see themselves as they appear on the television screen. Another camera with its associated viewer demonstrates how this equipment can provide a means of overcoming problems of remote observation in the petroleum industry.

Dodge Division, Chrysler Corp.
Detroit, Mich.
Block 118A

In attendance

WILLIAM S. WOOLSEY, BYRON SNOWDEN, W. K. WEST, WILLIAM C. HOFFMAN.

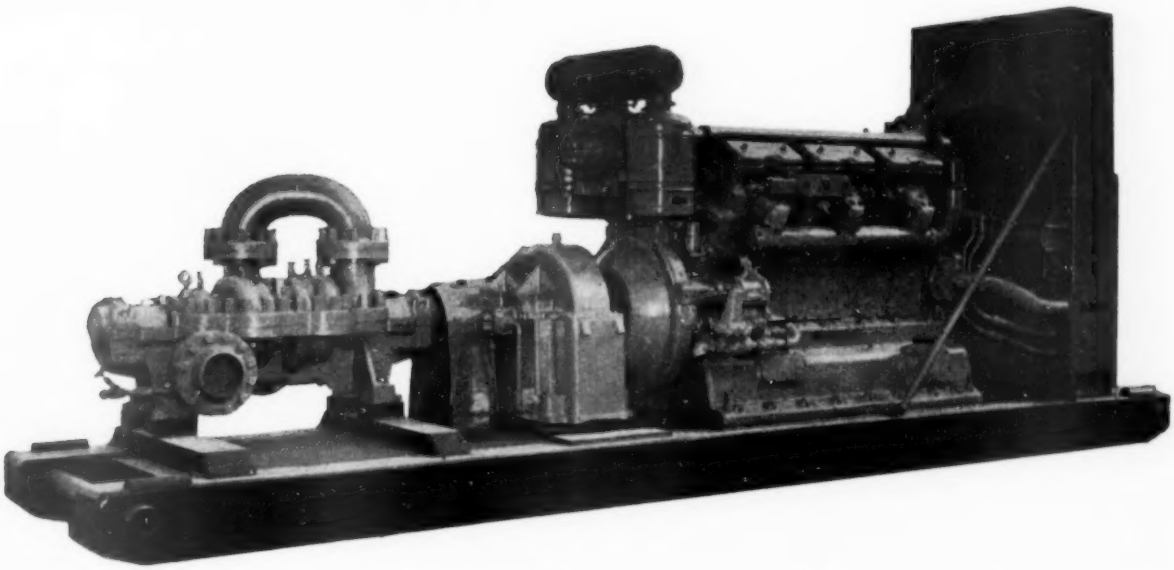
The Dodge truck exhibit includes both four-wheel-drive and conventional trucks, each with special equipment.

One four-wheel-drive truck is equipped with seismograph equipment. Another similar truck is equipped as a reel truck for stringing wire for communications and others are equipped for various oil-industry jobs.

Two-way telephone and a radio are installed in another truck. Also being shown are a ¾-ton chassis with oil-field utility body, a straight truck with pipe-line body, and a ½-ton pickup.

Dodge Power-Wagon, a full-size, four-wheel-drive, general-purpose truck.

PUMPING POWER



tailored to Your Needs...

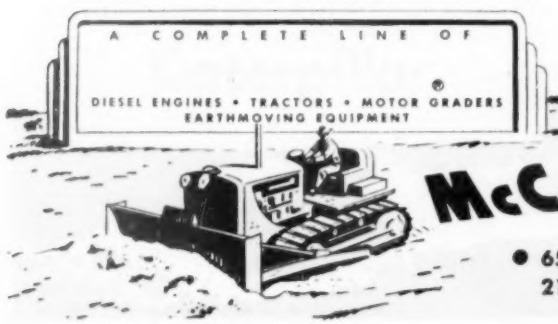
With Caterpillar® Diesel Engines

from 25 to 500 horsepower

We'll engineer and assemble complete pumping units . . .

Engine
Pump
Speed Increasers
Couplings
Skid

For Portable or Stationary Service . . .
Designed for YOUR Field Conditions



Write, wire or 'phone your Oil Capital Caterpillar Dealer

McCormick Machinery Co.

• 6501 EAST ADMIRAL PLACE • TULSA, OKLAHOMA
2110 NORTH BROADWAY • ADA, OKLAHOMA

an ACCO product

AMERICAN CHAIN

You Want Good Chain?
Here It Is...AMERICAN

Chains to take a rig down . . . and put it back together again. Chains to pull, lift, lower, or bind loads . . . AMERICAN makes 'em all. And they're the best chains ever made for oil men. Ask any trucker who has used them.

1 WINCH LINE TAIL CHAINS

Strong, flexible tail chains for wire rope. Made of heat-treated high carbon steel. Special drop-forged, alloy steel hook won't damage rope. Sizes to fit all winches.

2 BOOMER CHAINS

Made from H. C. High test or Endweldur 125 AMERICAN alloy chain. ACCO I-beam type grab hooks are attached at factory and proof-tested with chain. Popular sizes in 20-foot lengths.

You'll like these stronger, lighter in weight, easy to handle AMERICAN oil field chains. You can get them from supply stores. Specify . . . and *get AMERICAN Chain.*

See us at Booth 157
TULSA OIL SHOW

ACCO
AMERICAN CHAIN DIVISION
AMERICAN CHAIN & CABLE
York, Pa., Atlanta, Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.
TRADE MARK
American Chain

I.P.E. EXHIBIT DIRECTORY

Double Seal Ring Co.
Fort Worth, Tex.
52 California Building

Exhibit of this company includes its line of piston rings plus metallic and nonmetallic piston-rod packings.

Double Seal Union Co.
Houston, Tex.
5 Texas Drive

Dow Corning Corp.
Midland, Mich.
19N North Area

In attendance

M. H. LEAVENWORTH, L. A. TEICHTHESEN, T. B. GOLDMAN, R. T. ANDERSON, E. I. HAIRE, A. D. WINTERS.

New silicone products are being displayed and demonstrated at Dow Corning Corp.'s exhibit. Included are paint and protective coatings, electrical insulation, components for geophysical equipment, and a variety of specialized lubricants. Especially featured among the lubricants is a new silicone-based, high-pressure, thread compound developed for pipe joints in deep wells. This is the material formulated by Mellon Institute under sponsorship of the American Petroleum Institute and dedicated to public use. Designed to be applicable by brush in cold weather and yet maintain a tight seal against 10,000 psi. at 300° F., the grease will neither absorb moisture nor dry out and harden due to aging in service. Samples of this compound will be shown along with demonstrations illustrating its properties and performance.

Other lubricants include three Dow Corning silicone, extreme-temperature, ball-bearing greases. Water-repellent dielectric compounds and stable damping fluids used in oil exploration geophysical equipment will also be displayed, along with sample seisphones and seismometers.

Dowell Incorporated
Tulsa, Okla.
Block Y

In attendance

W. S. DAY, J. A. CUMMIN, L. A. COURTER, F. R. CARR, R. H. SMITH, D. D. PARSONS, J. H. ADKISON, W. W. LOVE, E. C. HARDY, JACK TALBOT, W. R. GRAVES, W. H. STEMP, JACK SUTHERLIN, C. L. POWER, E. H. NIELSEN, R. R. WAGNER, W. F. BROWN, F. S. COURTER, L. J. KUTLICH.

A large number of animated displays are being utilized to demonstrate Dowell equipment and services. Various displays are presented in addition to Dowell's latest diesel truck-mounted pumping unit. One of these is a Stratafrac service designed to fracture and acidize a formation in a single operation. Another is Sandfrac, an oil-sand treatment for fracturing low-solubility formations.

Dowell's Fixafrac service for the temporary plugging of existing fractures or high-permeability zones and forcing treating fluids to enter new sections is also displayed along with its acidizing services.

Included in the exhibit is an expendable

New mobile shooting unit is a further step in development of shaped-charge perforating.

PLAY OUT or PAY OUT

Have it analyzed with 700-reservoir experience....

CORE LABORATORIES, INC. ● **IN ALL ACTIVE AREAS**

Dallas, Houston, Corpus Christi, Midland, Abilene, San Antonio, Tyler, Wichita Falls, Lubbock, Oklahoma City, Ft. Worth, Great Bend, Shreveport, Lafayette, New Orleans, Natchez, Bakersfield, Denver, Sterling, Worland, Williston, Billings, El Dorado, Farmington, Lovington, Calgary, Edmonton, Venezuela, S. A.

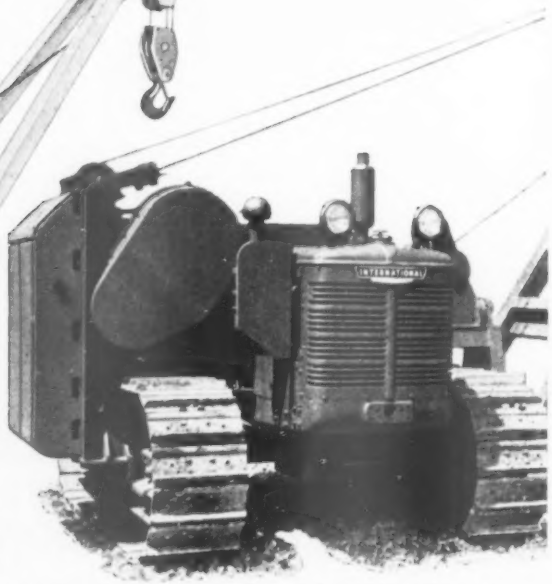
CORE LAB

PETROLEUM RESERVOIR ENGINEERING

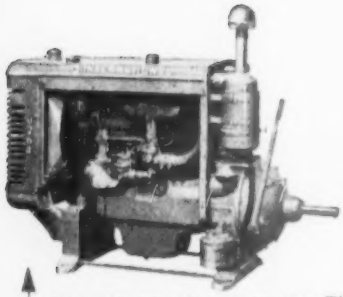
GREAT NEW IH Show

Pay-Off Power

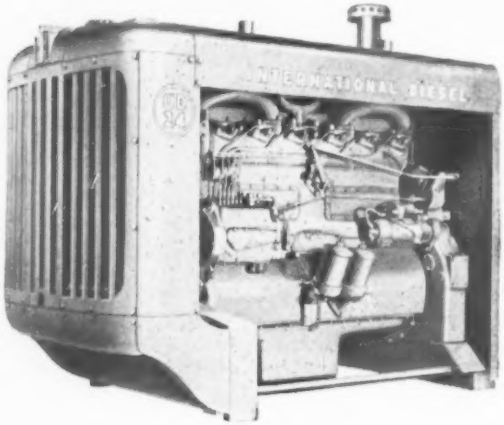
BIG RED CHAMP. The PBI-24C is champion of pipelayers, with 90,000 lbs. capacity at 4-foot overhang with counter-weights extended.



A NEW 1953 MODEL. Matched to the International TD-14A crawler, the new Superior PBI-14A pipeboom is designed to handle loads up to a capacity of 27,800 lbs. at 4-foot overhang. The PBI-14A boom has all new heavier construction and improved operating features and, with the International TD-14A crawler, makes an ideal all-around "pipeliner's package" on almost any spread.



DYNAMIC DIESEL. Here's the International UD-24 diesel power unit. See two of these UD-24s compounded to develop 360 BHP. And get the advance low-down on the new U-1091 power unit, natural gas-burning companion to the UD-24, which will develop 200 horsepower and which will soon be available to oil field operators.



PUMPING POWER FOR PENNIES. That's what any one of the six carbureted International power unit models can deliver for thousands of dependable hours on your pump jacks. Shown above is the new U-264 model which, like the new U-164 power unit, features an increased horsepower rating with no increase in weight. Four-cylinder models range in size up to 55 maximum horsepower—one for every low-cost pumping requirement.

Stoppers

for the Oil Fields from Preparation to Pipelining

SEE THEM AT THE IH EXHIBITS IN TULSA

A new 1953 International-Superior pipeboom crawler and two improved International pumping engines will be featured show-stoppers at the International Petroleum Exposition in Tulsa, Oklahoma, May 14-23.

Two exhibits, one at the IH Building at the exposition grounds and the other opposite the IH District Office in the 500 block on East Second Street, will include tractors equipped with pipebooms, bulldozers, bucket-loaders and mowers, as well as diesel and gas engines—pay-off power for every oil field requirement from preparation to pipelining.

On display will be the recently announced Superior PBI-14A pipeboom, designed for the International TD-14A tractor, also shown will be the big PBI-24C pipeboom for the TD-24 tractor.

These booms feature greater lifting capacities, improved visibility, better boom and line speeds, new safety features and an improved load brake that gives operators a better "feel" when handling heavy pipe loads.

Two new pumping engines, the U-164 and U-264, will be shown along with other carbureted and diesel engines in the International line.

See us at the Show! And see your International Industrial Distributor for full details on how IH can pay off for you.

INTERNATIONAL HARVESTER COMPANY, CHICAGO 1, ILLINOIS

INTERNATIONAL HARVESTER

INTERNATIONAL

POWER THAT PAYS

★ SNEAK PREVIEW ★

When you visit the IH exhibit, be sure to see the sneak preview of the new International U-450 carbureted engine, one of the six six-cylinder models ranging in size up to 103 horsepower which will soon be on the market.

glass gun developed by Dowell plus a radioactive fluid survey service whereby selective acidizing of specific predetermined zones may be accomplished without pulling tubing or setting packers, and radioactive channel determination surveys for locating channels of communications between zones.

Dowell's exhibit also covers many of its other services including: photoelectric water-location survey, selective acidizing, spinner survey, caliper survey, permeability survey, plus chemical cleaning of storage tanks and refinery equipment.

Dowell's products display includes Corban, a corrosion inhibitor for oil and gas condensate wells, New Jelflake for correcting mud losses due to lost circulation, and plastics for solving production problems and aiding in remedial programs.

Dresser Engineering Co.
Tulsa, Okla.
9 Park Lane

In attendance

L. L. DRESSER, ROBERT M. DRESSER, CHARLES A. CONE, M. S. NOTLEY, C. P. STANLEY, W. H. LANCASTER, E. G. McGOUGH, JERRY H. McGUIRE, L. R. PHILLIPS, JESSE M. SAGE, W. G. STOREY, C. V. SUDDERTH, A. CLYDE YOUNG, A. B. RICHERT, W. E. KINNEBREW.

Dresser Engineering Co., a service organization specializing in all types of petroleum-industry processing and construction, is displaying pictures of recent projects.

Dresser Industries, Inc.
Dallas, Tex.
Block 11

Grouped at Dresser's location in Block 11 are the various operating units of the parent corporation including those engaged in both domestic and foreign services. Information on exhibits of these organizations is given under separate listings. The operating units of Dresser Industries, Inc., are:

Bovaird & Seyfang Mfg. Co.
Clark Brothers Co., Dresser Operations, Inc.
Dresser Manufacturing Division.
Idecco Division Dresser Equipment Co.
Ideco Division Dresser-Stacey Co.
Kobe, Inc., Division Dresser Equipment Co.
Magnet Cove Barium Corp.
Roots-Connersville Blower.
Security Engineering Division, Dresser Operations, Inc.
Stacey Brothers Division, Dresser-Stacey Co.

Dresser's foreign units are:

Clark-Italy, S.p.A.
Clark Brothers Pan American, Inc.
Dresser Manufacturing Co., Ltd.
International Dresser Equipment Co.
Pacific Pumps of Canada, Ltd.
Security Engineering Canada, Ltd.

Dresser Manufacturing Division
Bradford, Pa.
Block 11

Drilling Equipment Manufacturing Co.
Oklahoma City, Okla.
27 California Building

In attendance

P. R. SNETCHER, C. L. KNIGHT, ROY WILKERSON, N. J. BARNARD, W. B. HICKMAN, J. G. ALLEN, B. H. PHILLIPS, A. C. BALDWIN, C. A. CRENSHAW, M. T. HARRELL, RAY ARNOLD, J. H. PERRY, L. T. WALTIMIRE, L. D. WALTERS, C. G. FAGER, HARRY DENTON, H. E. SNELSON, A. S. HERRON.

Various new drilling tools and services are being exhibited. Included are a combination casing and blowout-preventor tester and No-Chip tong dies. Other drilling equipment and services shown are rotary swivel, wash pipes, and wash-pipe packing, plus pump brace and spacers along with choke nipples, standpipe clamps, hose hobbles, hose adapters, mud hoppers, and pump studs.

Drilling Magazine
Dallas, Tex.
3 and 256 Oklahoma Building

Drilling Service
Dallas, Tex.
Block 117
(See Mayhew Supply Co., Inc.)

Duff-Norton Manufacturing Co.
Pittsburgh, Pa.
154-155 Oklahoma Building

In attendance

D. C. HAMILTON, J. F. McCARTNEY, W. I. FLOYD, T. W. KRUEGER

Duff-Norton is displaying a complete line of its ratchet screw hydraulic jacks for oil industry maintenance, repair and rigging work. Featured products include a line of hydraulic jacks, for rig movers and contractors. Also featured is the "Roustabout" jack, a general-purpose tool used on and about rigs for lifting, lowering, and pushing work.

Bob Dunning-Jones, Inc.
Tulsa, Okla.
19 Park Lane

In attendance

BOB DUNNING, JOHN STERRETT, NICK KNOTT, Bob Dunning-Jones, Inc.; BILL GOODRICH, Toro Manufacturing Co.

Bob Dunning-Jones, Inc., is introducing Toro-Whirlwind grass cutting machinery. Shown are the 76-in. Professional, with reverse gear; the 27-in. Starlawn, a heavy-duty industrial machine with floating axle and riding sulky; plus the self-propelled 24-in. Whirlwind; a 31-in. Whirlwind Grass King; and the 30-in. Park Special. Also shown are a Spartan trailing mower which is hydraulically lifted as a three-unit gang with Toro, Ford, or Ferguson tractors; the Toro Roughmaster mower for large and heavy growth; the Toro Spartan, with four-blade reels and pneumatic wheels; plus the Whirlwind 80 operated from power takeoff of tractor.

Toro mower unit with riding sulky.

Earth Equipment Corp.
Los Angeles, Calif.
Block 203

In attendance

D. E. MOORE, L. A. SPURLIN, A. D. SPURLIN

Earth Equipment Corp. and Spurlin Sales Co., coexhibitors, are showing the Everett Trencher, the McGee Angle Dozer and McGee Scraper.

The Everett trencher operates from the power takeoff of a Ford, Ford-Ferguson, or Ferguson tractor, and is raised and lowered

by a built-in hydraulic system. The McGee Angle Dozer is displayed for mounting on the front of a Ferguson, Ford-Ferguson, or Ford tractor. Equipped with a self-contained hydraulic upper link and cradle action, the McGee Scraper is designed for scraping, backfilling, scarifying, and grading jobs.

Eastern Industries, Inc.
New Haven, Conn.
76 Kansas Building

Eastman Chemical Products, Inc.
Kingsport, Tenn.
Block 208F

In attendance

R. R. MOORE, R. JACK GRANTHAM, J. B. THOMPSON, JR., E. MURRAY WILLIAMS, WALTER P. BUSSART, LEWIS B. CONNELLY, G. W. CARPENTER, WILLIAM P. GIDEON, H. D. OLIVER, JR., H. M. McDANIEL, C. B. FOX, JR., CHARLES L. SEAY, DENNIS C. GUTHRIE, ARTHUR B. THURMAN, HAROLD REEBEL.

Corrosion-resistant Tenite butyrate plastic pipe and Tenamene gasoline inhibitors will be on display.

A demonstration shows how lengths of the lightweight, corrosion-resistant Tenite plastic pipe may be rapidly joined together by solvent cement and slip-sleeve couplings. An assortment of fittings made especially for Tenite plastic pipe is also being shown.

For the benefit of refiners, Eastman is exhibiting its line of Tenamene gasoline additives, giving particular emphasis to the combination inhibiting-sweetening properties of Tenamene 2. This portion of Eastman's exhibit contains a typical flow chart illustrating the simplicity and economy of Tenamene

Special tools are not needed for cutting Tenite plastic pipe.

You'll find the block features you want...

in the Baash-Ross "DBM" MULTIPLEX!

Available through leading supply stores

Here—from the originators of modern unitized Block design—is a traveling-block-and-hook with really advanced design and performance features . . .

Ample Weight Adjustability—without adding loose parts or changing the streamlined contour. Pockets built into the MULTIPLEX can be filled with lead to meet weight requirements. Weight can be increased as much as 20% over unweighted Blocks—is easily removed whenever desired!

Space Saving Compactness—combines Block, Hook and Link Ears in one close-coupled unit that is both short and unusually narrow, (special narrow-width bearings—no spacer plates). Compare MULTIPLEX dimensions with *any other* Block-and-Hook of same capacity!

Rugged Body Construction—entire load carried on internal framework of heavy rolled steel plates. Outer shell is completely free of load stresses!

All-In-One Connector—self-locking Hook for swivel bail, locking type Link Ears for elevators, both in one spring-loaded unit that swivels full 360° or can be quickly locked in any of 8 equi-spaced positions!

Low Center of Gravity—assures proper balance while running, steadier Block travel, greater working efficiency!

Double-Row Tapered Bearings on *each* sheave carry full radial and thrust loads!

Individual Grease Ducts—machined into center pin, assure positive lubrication to each bearing from conveniently located external fittings!

Close-Fitting Guard prevents lines from jumping sheaves—also permits threading Block without removing guard. Or where lines are looped in rig, guard can be easily removed for reeving!

Completely Streamlined—even bolts, pins and grease fittings are fully recessed and protected!

Baash-Ross

TOOL COMPANY *Our 33rd year*

GENERAL OFFICES: 5512 SO. BOYLE AVE., LOS ANGELES 58

OKLAHOMA CITY 9 • HOUSTON 20 • ODESSA • CASPER

Export Offices: 11 W. 42nd St., New York 36

THE Baash-Ross MULTIPLEX *is available in a complete range of sizes to meet any drilling or production requirement. Write direct for complete details—or see your nearest Baash-Ross representative!*

2 inhibiting-sweetening plus pertinent data about another gum inhibitor, Tenamene 1, and a copper deactivator, Tenamene 60.

Eastman Oil Well Survey Co.
Denver, Colo.
44-59 Scientific and Technical Building

This company is showing a group of its tools and equipment. Included is lateral drilling equipment designed to attach to any rotary drill stem for drilling lateral holes into producing formations to increase drainage area and for preparing a well for acid treatment, repressuring, and other conditions where nonporous formations of low permeability are encountered.

A new type whipstock is also shown along with a hydraulic-actuated pilot reamer which can be used with all types of pilot reamers, plus the Eastman casing roller, a tool specially designed for the purpose of restoring collapsed casing and liners to their proper sizes and roundness.

Another item displayed is Eastman's drop-type multiple-shot instrument for directional surveying. A new type of angle unit that settles instantaneously and can measure accurately angles from vertical to 90° is used with the instrument.

Also shown is the Eastco self-checking mechanical drift indicator which was recently perfected. This instrument has a self-checking feature of making two successive recordings. It records mechanically on a specially prepared paper disk which is punched by the plumb-bob stylus. No wrenches of any kind are required to open or close the drift indicator barrel.

Still another item, the Eastman single-shot survey instrument, is on display. This new small-diameter oil-well-surveying instrument makes a photographic record of the relative positions of a compass card and plumb bob which are self-contained. The photographic record, which may be taken at any desired point in the well bore, indicates both the direction of the hole and its deviation from vertical. The instrument is encased in a nonmagnetic watertight barrel which is 2⅛ in. o.d.

Eastman drop-type multiple-shot instrument and carrying case.

Eberhardt-Denver Co.
Denver, Colo.
1-2 Scientific and Technical Building

In attendance
ROBERT BASS
(Exhibited by Allied Bearings Supply Co.)

Edwin H. Fitler Co.
Philadelphia, Pa.
4 Texas Drive

In attendance
H. HAMSCHER, JR., G. S. PRECHTEL, CHARLES G. KRPEC, JIM A. ENGLAND.

Exhibited are various types of Fitler manila "waterproofed" oil-field cordage, nylon rope, and other synthetic cordage.

Eggelhof Engineers, Inc.
Tulsa, Okla.
169 Oklahoma Building

In attendance
BOB MOLNARI, CLAUDE CULLINANE, D. B. CHAPMAN, GLENN TAYLOR, HENRY EGGELHOF.

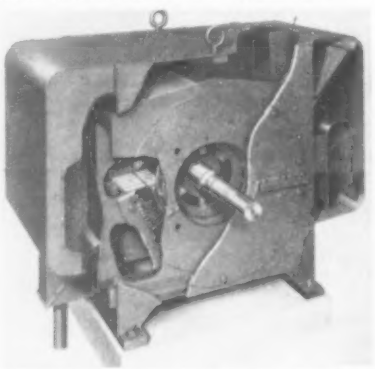
This company is exhibiting gas regulators by Chaplin-Fulton Manufacturing Co.; drainers and traps by Clark Manufacturing Co.; filters by Cuno Engineering Corp.; float level switches by Magnetrol, Inc.; electronic level switches and controllers by Fielden Instrument Division of Robertshaw-Fulton Controls Corp.; meters by Penn Industrial Instument Corp.

Eisenwerk Wuelfel
Hannover, Germany
Block 202

Elliott Co.
Jeannette, Pa.
125-126 Oklahoma Building

In attendance
F. W. DOHRING, C. F. McGINNIS, F. R. BAIRD, W. E. WIDAU, L. B. McCARTHY, H. W. HONEFENGER, J. D. WILLCOX, JR., W. K. BERNHARD, J. N. McCLURE, R. L. HENRY, J. T. LAWRENCE.

Feature of this company's exhibit is its Ridgway Division outdoor splashproof (weather-protected) motor. The exhibit is designed to demonstrate the ability of the motor to operate successfully under the most unfavorable weather conditions.



Sectional drawing of Elliott Co.'s outdoor-splashproof (weather-protected) motor enclosure.

Focus of the display is a 200-hp. outdoor splashproof motor of latest design, with screened and filtered air inlets. This motor is operating continuously within a glass enclosure while being completely drenched with water from a series of nozzles. The interior of the motor is visible through a transparent plastic water separation chamber and end bracket.

Supplementing this demonstration is a large three-dimensional sectional drawing of an outdoor splashproof motor which visualizes flow of ventilating air through the motor and shows significant structural details. A small plastic model is also available for demonstrating the principle of the outdoor splashproof motor.

Emerol Manufacturing Co.
New York, N. Y.
60-62 Oklahoma Building

In attendance
W. C. PIERCE, C. B. PIERCE, TED L. CRAIG, F. W. McELRAVY, P. A. STORER, GEORGE R. NORTON, JR., E. O. DILLIARD, J. E. CLARK.

This company is displaying its Marvel inverse oiler, an auxiliary top-cylinder-lubrication system for internal-combustion engines. The oiler feeds, through the intake manifold, a specially compounded high-film-strength lubricant direct to upper motor parts. A 2-qt.-capacity feeder is especially designed for industrial engines, trucks, and tractors. Emerol is also showing its Mystery Oil product.

Empire Pattern & Foundry Co.
Tulsa, Okla.
257-258 Oklahoma Building

Castings of "Meehanite" metal, aluminum, and bronze are being displayed by Empire Pattern & Foundry Co., an associate exhibitor with Enardo Manufacturing Co.

Meehanite castings in rough and finished form are displayed, as well as the patterns from which these castings were made. The many steps in the making of pressure-cast, match-plate patterns, as well as various castings made from these patterns are also being shown.

In addition, castings made by the permanent mold process and the molds are also displayed.

Emsco Manufacturing Co.
Los Angeles, Calif.
Block 7

In attendance
W. T. POWELL, W. C. KINDER, J. I. TUCKER, A. H. MILLER.
(Exhibited by Continental Supply Co.)

Enardo Manufacturing Co.
Tulsa, Okla.
257-258 Oklahoma Building

Enardo is showing its various products for the oil industry. Included are gage and thief hatches ranging from deadweight types to spring-loaded types. Cutaways are displayed to demonstrate operation of some of these items.

Pressure-vacuum in-line valves which are designed for installation in vapor lines to relieve tank pressures are also shown. A cutaway model of the weighted-type in-line valve is on display along with another cutaway of a diaphragm type supersensitive valve.

Still another cutaway is displayed to illustrate a valve designed for vertical installation on a stack at the end of the vapor line. This unit is provided with a testing level for checking its operation and for relieving tank pressures when necessary.

Enardo's new automatic rod-line hookoff is displayed as a full-sized working model. The device automatically hooks off a pump rod line after any number of hours run, up to 22 hours. It eliminates return trips to hookoff wells which are to run for different lengths of times.

Other cutaway displays include an automatic fill valve, oil and gas valves, and tank shutoff valves. A clock shutoff valve and two series of time cycle switches are shown as demonstrating models. These units are designed to cut off either fuel supply or ignition current on pumping engines or other devices after a predetermined run.

Engis Equipment Co.
Chicago, Ill.
253 Oklahoma Building

In attendance
J. P. STEINDLER, E. J. SCHNEIDER, A. W. YOUNG, J. F. GARUFO, C. L. SAWYER.

The exhibit of Engis Equipment Co. fea-

Engis Co.'s "Matrix" thread gages.

tures reference, master and working gages to A.P.I. specifications. These inspection units range in sizes from small gages used on pump fittings up to 20-in.-diameter gages for line pipe and casing, as well as taper gages for rotary-drilling equipment.

Precision built under the "Matrix" trade name, the gages are made under A.P.I. license by Coventry Gauge & Tool Co., Ltd., of Coventry, England. They are checked by the National Physical Laboratory (British National Bureau of Standards) which issues a certificate showing the sizes of the gages and the "standoff" values for mating plug and ring.

Also included at the Engis exhibit are a selection of precision instruments used for alignment, for the determinations of angles and inclinations, for linear measurement, and for surveying problems.

Engineering Test Service
Tulsa, Okla.
11 Park Lane
In attendance
DWIGHT J. EVANS
(Exhibited by Sperry Products, Inc.)

Ensign Carburetor Co.
Huntington Park, Calif.
194 California Building
In attendance
R. P. ENSIGN, H. W. ENSIGN, R. K. ENSIGN, A. J. ST. GEORGE, G. W. KELLER, R. G. ABBOTT, L. G. SMITH, ROY MYLANDER.

This company is showing its complete line of natural-gas and L.P.-gas carburetion equipment.

Enterprise Engine & Machinery Co.
Division of General Metals Corp.
San Francisco, Calif.
Block 122

This company is exhibiting its "slow-medium" speed heavy-duty Enterprise engine designed to operate on a dual-fuel principle. This engine develops 400 hp. at 800 r.p.m. and, through Falk gears, drives a 6-in. two-stage United centrifugal pump at 3,550 r.p.m. to deliver 1,510 g.p.m. at 375 psi. A Young radiator with engine-driven fan provides jacket water cooling and lube-oil cooling for the engine and gear. The unit is controlled by Foxboro instruments which automatically shut down, restart, or alter speed to conform to predetermined suction or discharge pressures.

Ethyl Corp.
New York, N. Y.
127-128 Kansas Building
In attendance
E. L. SHEA, H. R. BERG, W. K. McCULLOCH, D. J. CHAPMAN, R. A. DOUGLASS, A. C. TULLY, C. R. BARTHOLOMEW, H. K. BALL, I. E. FLAA, M. L. ALSPAUGH, L. L. HUXTABLE, L. D. REIS, A. D. MILLER, F. E. DeVORE, A. G. WOSKA, JR., E. J. GALLAGHER, D. P. JEPPE, K. J. HURST, R. G. SCOTT, C. H. WELCH, R. L. SMITH, Q. Q. HALL, E. E. MOORE, C. A. RANKIN, H. R. HAMAKER, A. W. RAMSEY, B. R. FRAZIER, CERISE COWLEY, L. M. PHILLIPS, M. ESPINOSA.

This exhibit is designed to explain how Ethyl antiknock compounds are produced—one of the most complex and highly specialized arts in the entire field of industrial chemistry. The exhibit consists of three main units. Its central section is an illuminated flow chart that traces step by step the manufacture of Ethyl antiknock compounds, their blending with gasolines produced by the nation's refiners, and the finished product's eventual use in a gasoline engine.

At regular intervals, a representative of the company's manufacturing department verbally describes the manufacturing process. Following along on the specially lighted flow chart, he shows how the raw materials of pig lead, salt, natural gas, petroleum, sea water, and sulfur are fashioned into and blended with other intermediate chemicals to form Ethyl anti-knock compounds.

On either side of the exhibit's flow chart are dramatic dioramas of Ethyl Corp.'s two manufacturing plants, one at Baton Rouge (the largest of its kind anywhere) and the other at Houston. A unique feature of the dioramas is that every 10 minutes, through the use of special lighting effects, the plants pass

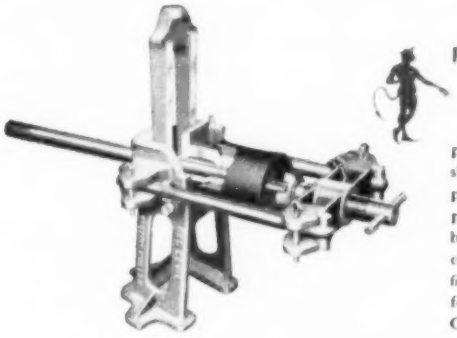
I.P.E. EXHIBIT DIRECTORY

RED DEVIL

"DIA-HARD" PISTON RODS

For high pressure abrasive service

RED DEVIL Piston Rods are first choice where drilling conditions are severest because of the extreme hardness of the deep HIGH-CARBON wear resistant "DIA-HARD" case, coupled with tough core properties which give the highest tensile strength against breakage. All rods are hardness tested and precision gauged to maintain a world-wide reputation for quality. Write for Catalog No. P-101.



RED DEVIL PISTON PULLER

For tapered type rods

The usual practice of removing pistons from rods by blows of a sledge hammer often damages either pistons or rods. A Red Devil piston puller easily and quickly removes badly stuck pistons without injury to either part. All elements are made of finest quality alloy steel, heat-treated for strength and long life. Write for Catalog No. P-106.

RED DEVIL PISTON ROD LOCK NUT

These "Hammer Lug Type" nuts provide a fast and positive means for locking piston rod in crosshead. Made from alloy steel and heat treated, they will last indefinitely. Face of nut is precision machined for full seating surface at right angles to axis of threads to prevent fatigue stresses in rod. Write for Catalog P-102.

Complete information in Composite Catalog or write for price catalogs noted above. Red Devil products are available through your supply store.

OIL WELL MANUFACTURING CORP.

6002 South Alameda St., Los Angeles 1, California

For Blow-Out Preventer Service

HERE are the Barco Flexible Ball Joints for piping connections to blow-out preventers and other drilling equipment that meet ALL SAFETY REQUIREMENTS. These are 1" SERIES 600 steel joints shown here on a drilling rig in the Bakersfield area of California.

PRESSURE SAFE, FIREPROOF! These joints eliminate the need for hose. They are recommended for hydraulic test pressures up to 7,500 psi. They are equipped with Barco Service No. 11MA metal gaskets. Joints contain no combustible material.

3 JOINTS DO WORK OF 5! Barco Ball Joints move *in any direction* permitting a 40% reduction in number of joints required. Barco SERIES 600 joints are available in a wide variety of sizes and styles. For test pressures up to 11,000 psi, order SERIES 2500 joints. *Available through your local supply store.*

Ask for Catalog 215:

BARCO
MANUFACTURING CO.,
539F Hough St.,
Barrington, Ill.
(A Chicago Suburb)

The Only Truly Complete Line of Flexible Ball, Swivel, Swing, and Revolving Joints

I.P.E. EXHIBIT DIRECTORY

through a day-and-night cycle to symbolize Ethyl's around-the-clock manufacturing operations.

Eugene Dietzgen Co.
Chicago, Ill.
236 Oklahoma Building

In attendance
A. D. ALLWINE, W. G. JOHNSTON, J. R. MARTIN, M. W. TRIPPLER, O. W. WOLD.

Dietzgen is displaying its reproduction processes along with surveying instruments and equipment plus map-drafting instruments and associated items.

Eustice Equipment Co.
Tulsa, Okla.
Block 115

This company, a supplier of production, refinery, pipe-line, and industrial equipment products, has its exhibit arranged similar to a modern supply store. Included is a moving display of Jensen pumping units powered with Wagner electric motors and with Fairbanks-Morse and Wisconsin gas engines. The motors are controlled with Nelson Electric Co. equipment.

The pumping equipment includes products of Norris, Bradford, O'Bannon, Hercules, Cameron, Hale, Harbison-Fischer, Hough, and others.

Also displayed is a complete line of Ansul Chemical Co. and Rockwood Sprinkler Co. fire-protection equipment.

Another display includes Reading-Pratt & Cady Co. valves and flanges and Tube Turns, Inc., forged-steel welding fittings. In addition, products manufactured by Dresser Manufacturing Co., Hinderliter Tool Co., H. K. Porter, Ridge Tool Co., and Watson-Stillman Co., are being shown.

Eutectic Welding Alloys Corp.
Flushing, N. Y.
42-43 Silver Lane

In attendance
R. D. WASSERMAN, F. F. ROEHLL, VICTOR H. LYON, HORTON GOSS, JOSEPH A. LUSTEC, DON W. RASMUSSEN, ROYAL T. JOHNSON.

Eutectic is giving the first public demonstration of "DynArc." This new kind of "arc-torch" pierces and cuts through brick, concrete, granite, stone, slate, mica, asbestos, ceramic, silica, slag, wire, plus various other metallic and other nonmetallic refractory materials.

Over 160 different "EutecTrodes," "EutecRods," and "Eutector" temperature-indicating fluxes for all metals at all heats are being shown. EutecRods and EutecTrodes for production, maintenance, repair, and salvage are also being demonstrated. Another demonstration shows how oxyacetylene joins aluminum, magnesium, steel, cast iron, copper, and brass. Electric-arc application on aluminum, mild steel, medium-alloy steel, and cast iron is also displayed. The new ChamferTrode for chamfering and grooving with electric arc and CutTrode for cutting and piercing all metals are exhibited.

Ever-tite Coupling Co., Inc.
New York, N. Y.
10-11 California Building

In attendance
JOHN T. KRAPP, DANA F. GREENLY.

Company is showing its new coupler designed for tightfill deliveries to underground storage tanks. The new Ever-tite coupler is made of high-tensile aluminum, with bronze actuating lever and cams. It is light in weight,

WELCOME

TO SCHRAMM EXHIBIT . . .

BLOCK 207—BOOTH 86-N

OIL SHOW

MAY 14 to MAY 23

TULSA, OKLAHOMA

SEE

- Portable Engine Driven Compressors, 20-cfm to 600 cfm
- Twin Boom Drills
- Tractor With Superior Pipe Boom On Side
- Pneumatractors Equipped With: Backhoe, Front End Loader, Sky-Worker, Ka-Mo Auger, Auburn Trencher.
- Industrial Compressors
- Also a Complete Line of Construction Tools

FOR

- Exploratory Drilling
- Production Drilling
- Coating Pipe Lines
- Extinguishing Tank Fires
- Operating Tubing Tongs
- Pipe Line Construction
- Refinery Maintenance
- Tank Farm Maintenance
- Digging Trenches, Laying Pipe, Carrying Material, Levelling, Grading, Re-Pressuring.

SCHRAMM, INC.

The Compressor People

WEST CHESTER • PENNSYLVANIA

It's a lot easier to work with

RIDGID

Extra-Utility Pipe Vises

Compare those work-saver RIDGID Vises with any others and you see the bonus of extra utility you get for your money. Kit vise is easily toted to the job, quickly clamped on edge of bench or plank, ready to use. All other RIDGID vises have handy integral pipe benders and rests to make cutting and threading easier. Full-width firm-gripping jaws of top quality tool-steel, bodies of rugged special malleable—for years of service. 9 models, yoke and chain, 23 sizes, meet every need. Get your money's worth—buy RIDGID Vises at your Supply House.

THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIDGID

Work-Saver Pipe Tools

I.P.E. EXHIBIT DIRECTORY

yet rugged. All moving parts are completely enclosed and the coupler is equipped with a carrying handle.

Ever-tite coupler.

Exner-Dodge, Inc.
Coffeyville, Kans.
156 Oklahoma Building

Exploration Surveys, Inc.
Dallas, Tex.
25N North Area
In attendance
DON W. JOPLING, L. L. LOGUE, GEORGE W. LISLE.

This exhibit features the company's copyrighted countrywide gravimetric and magnetic surveys and reports. Displayed are figures and illustrations of the company's operations and of its two overseas affiliates, Exploration Surveys International, Inc., and Exploration Seismic, Inc.

Fafner Bearing Co.
New Britain, Conn.
1-2 Scientific and Technical Building
In attendance
E. W. FULLMAN, JAMES F. RICKETTS
(Exhibited by Allied Bearings Supply Co.)

George E. Failing Supply Co.
Enid, Okla.
Blocks 10 and 204, also 51N North Area and North Side of California Building
In attendance
GEORGE E. FAILING, HARRY FAILING, JAY C. FAILING, GEORGE P.

Failing Supply Co.'s 1,000-ft. shot-hole rig.

WICHITA *Air-Tube* CLUTCH...

the Versatile Workhorse

LOOK AT THESE OTHER OUTSTANDING ADVANTAGES–

- Safer Operation
- Cooler Running
- Minimum Slippage
- No Lubrication
- No Adjustments

A Wichita Engineer is available near you for free consultation . . . Contact him TODAY!

This simple, compact, powerful, trouble-free Air-Tube friction clutch combines all the advantages inherent in air operation, such as: convenient remote control, small manual pressure required for full torque, smooth starting and quick disengagement.

A Wichita Air-Tube Disc Clutch is engineered to give longer service at a lower cost because it requires very little maintenance. Many test runs of Wichita Clutches have exceeded 2½ million engagements and still no failures occurred. Such performance is proof of the sound engineering behind Wichita Clutches.

WICHITA DISTRIBUTORS

Brehm-Lahner, Inc., Detroit, Michigan
L. H. Fremont, Cincinnati, Ohio
W. G. Kerr Company, Pittsburgh, Pa.
Smith-Keser & Co., (Main Office) West Hartford, Conn.
Smith-Keser & Co., Philadelphia 44, Pa.
Smith-Keser & Co., New York, N. Y.
Frank W. Yarline Co., Chicago, Ill.
Power Rig & Equipment Co., Inc., Long Beach, Calif.
John C. Burge, Inc., Oklahoma City, Okla.
Empire Machinery Company, Odessa, Texas
Empire Machinery Company, Abilene, Texas
Oilfield Motor Service, Alice, Texas
Petroleum Equipment Distributors, Ltd., Edmonton, Can.
Hunt Tool Company, Houston, Texas

WICHITA Falls
FOUNDRY & MACHINE CO., INC.
WICHITA FALLS, TEXAS, U.S.A.

Ad 701

More than a mere pipe fitting!
catawissa
PERFECT SEAL
unions
give a 3 to 1
safety factor
PLUS
A PERFECT SEAL!
THERE'S A CATAWISSA PERFECT SEAL UNION FOR EVERY USE . . . ALL TEMPERATURES, ALL PRESSURES!
The full dependability of HOT FORGED STEEL is yours in a Catawissa Union (hot forged from solid steel bars) with several extra value features that are exclusive here at the UNION SPECIALISTS!
All Catawissa Unions are designed to give a 3-to-1 SAFETY FACTOR . . . 3,000-lb. service unions are tested to 9,000-lbs., 6,000-lb. service unions tested to 18,000-lbs., etc.
Exclusive Ball-to-Angle seat design assures a PERFECT SEAL even when the pipe is not in alignment!
Machining operations assure a UNIFORMITY AND ACCURACY heretofore found only in special fittings and, with rigid inspection both during and after machining, guarantees LEAKPROOF CONSTRUCTION!
Satisfaction is guaranteed in any application—whether it be general low pressure service or extremely high pressures and temperatures (for air, oil, gas, chemicals, hot oils, gases or steam).
WRITE FOR CATALOG 11
AVAILABLE FROM LEADING INDUSTRIAL SUPPLY FIRMS
CATAWISSA VALVE & FITTINGS COMPANY
450 MILL ST. • CATAWISSA, PENNA.

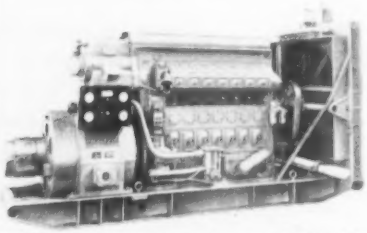
I.P.E. EXHIBIT DIRECTORY

GREGORY, JR., ROBERT GREER, H. J. GODSCHALK, E. L. ALEXANDER, R. L. BLAIR, DICK MILES, WALTER BULLER, DON ROGERS, PETE MARTIN, V. C. MICKLE, BURT PEDIGO, WILLIAM HALL, RUSSELL BROWN, JIMMY HELTON, BUD FLOYD.

This company is displaying seven of its portable drilling rigs. Six of these rigs are in operation with full crews. One rig is equipped either for liquid or compressed-air drilling. Another unit, a new-model shot-hole rig, is also in operation. In addition, two Failing Holemaster units and an English-manufactured Failing unit are operating.

Featured is a new electric logging unit, a trailer-mounted rig, and a complete water-well unit, including drilling rig, casing, pump, and screen.

Fairbanks, Morse & Co.
Chicago, Ill.
Block 203

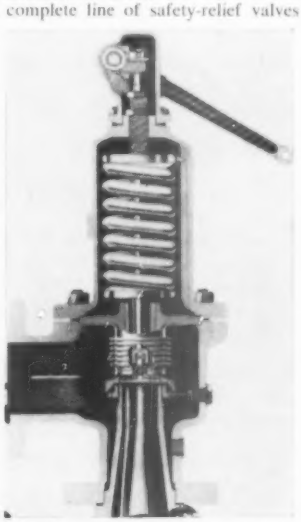


Fairbanks, Morse & Co.'s new lightweight engine.

This firm is featuring its new opposed-piston diesel designed for heavy-duty applications. The new unit is designed to fill needs in stationary power plants, and for other services.

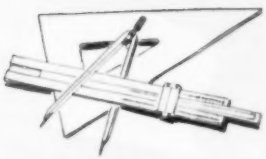
Farris Engineering Corp.
Palisades Park, N. J.
10-11 Kansas Building
In attendance
V. W. FARRIS, R. V. BIAMONTE, C. W. WEBER, E. GROTH, K. GROSSE, W. J. ALBERTI, L. D. McKAY, J. A. WILSON, A. KENT, B. PARKER, J. V. D'AMICO, JR., B. D. LANDES, J. ZACHARY, W. A. PETERSON, H. OHL.

A complete line of safety-relief valves and

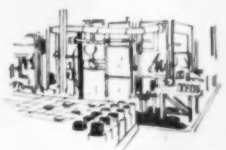


Farriseal bellows-type 2680 safety relief valve, for corrosive media.

There is more than meets the eye..



Advanced design. The list of **REED** tool joint developments is assurance that **REED** Tool Joints contain all the latest improvements in design.



Precision heat treatment in these modern furnaces gives every **REED** Tool Joint the right combination of toughness and wear resistance.

120 separate inspections assure uniform high quality of every **REED** Tool Joint — minimizing the chance of premature failure.

..in REED TOOL JOINTS

YOU can't see the expensive alloys and the "tailored" heat treatment that help make **REED** Tool Joints last longer. Nor can you see the experience and integrity of the organization that stands behind every **REED** Tool Joint.

When you look closely, however, you can see the fine surface finish on the tool joint shoulder. You can see the pre-lubrication infused into the threads. You can see the **REED** Mark of Quality — the inspectors stamp that signifies that this tool joint has passed 120 exacting inspections.

But whether you can see the difference or not, drilling contractors everywhere will tell you **REED** Tool Joints last longer.

REED ROLLER BIT COMPANY

HOUSTON 1, TEXAS

NEW YORK LONDON BUENOS AIRES

THE MARK OF QUALITY

MISSION

MUD PUMP PARTS
SAVE TIME AND MONEY
BECAUSE THEY WORK TOGETHER

Better than any other combination

*Trade Mark Registered U. S. Patent Office

Why you can depend on these five parts to 'perk up' mud pump performance

There is an axiom that can be applied to mud pump performance that's just as true as the fact that water runs down hill: mud pump performance can be no better than the INDIVIDUAL performance of the five most vital parts in the pump.

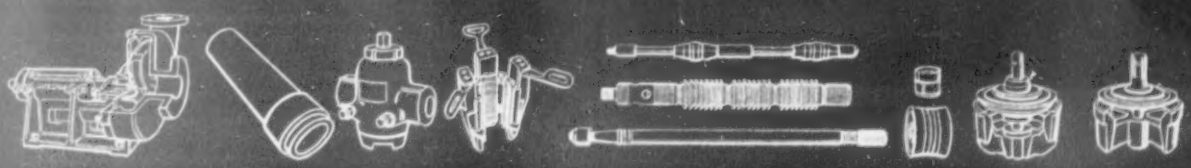
That's why any mud pump that is all-Mission equipped has a brighter future for a longer, trouble-free life. Designed and made to work together, Mission mud pump parts DO work together better than any other combination to give more efficient pump performance.

Mission Pistons—Mission Piston Rods, file hard and Super-Surfaced . . . . Mission Self-Sealing Gland Packings—Mission Super Service Liner with Satin Finish*—Mission Valves, Silver Top and Super Service, with Mission Upper Valve Springs . . . . all have been carefully engineered, and field proved for the most efficient and economical performance. All are backed-up by Mission's unconditional guarantee of service.

So be practical about your mud pump parts. Specify all-Mission to your supply store. You can be assured that you will get more service per dollar with Mission products in your mud pumps.

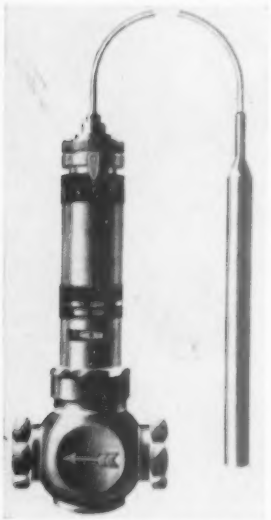
MISSION
MANUFACTURING CO.

P. O. BOX 4209 • HOUSTON, TEXAS
Export Office: 30 Rockefeller Plaza, New York



a new series of self-operating temperature regulators are featured by this exhibitor and its affiliates. Also shown is a line of nozzle, safety-relief valves, plus a new line of self-operating temperature regulators for handling steam, water, gases, and all fluids not corrosive to brass.

Farris Stacon Corp.
Palisades Park, N. J.
10-11 Kansas Building
(see Farris Engineering Corp.)



Farris Stacon type "V" direct-acting, self-operated temperature regulator, for steam, liquids, and gases.

Federal Fawick Corp.
Cleveland, Ohio
53-54 Texas Building

In attendance

THOMAS L. FAWICK, RICHARD S. HUXTABLE, T. E. METZ, K. J. RILEY, J. S. WALSH, Federal Fawick Corp.; JOHN V. EAKIN, CLEMENT REEVES, K. R. SPELMAN, Fawick Airflex Division; and J. DOUGLAS BENNETT, THOMAS D. WEISER, STEVE J. TRUKALO, WARREN D. FOLZ, Fawick Brake Division.

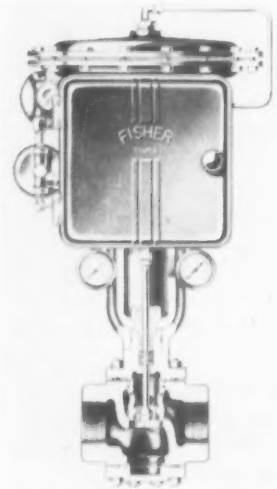
Fawick Airflex Division and Fawick Brake Division of Federal Fawick Corp. are showing a number of new products. The company is also exhibiting with its Airflex petroleum-industry distributor, Mid-Continent Supply Co. For the first time Fawick Airflex is showing its new Air-Ring clutch. This new unit ranges in sizes from 12 through 42-in. drum diameters with torque capacities from 27,000 to 380,000 in.-lb.

Fawick Brake Division is showing its new Hydro-air dual system brake for air-equipped vehicles. This brake features air operation for service applications with an auxiliary or emergency hydraulic system for use in case of failure of the air system. Air and hydraulic systems are separate and may be applied either independently or simultaneously. The brake is also designed for hydraulic brake systems with the same features of service and emergency. Each system—normal service or emergency—is controlled independently by either foot pedal or hand lever from a separate source of fluid pressure. Fawick brakes run from the smallest general automotive size in a three-brake-shoe construction to a six-brake-shoe construction.

Fawick Hydro-air dual system vehicle brake.

Fisher Governor Co.
Marshalltown, Iowa
76-79 and 132-135 Texas Building

This firm is showing its time-cycle intermitter and Level-Trol controls. Design of the Level-Trol permits the pilot to be changed in the field. Wide adjustment range is built into Fisher's intermitter and time intervals are easily set between ranges of 30 seconds to 24 hours.



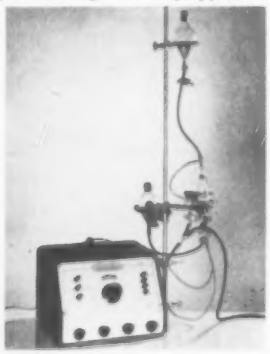
Fisher Governor time-cycle intermitter.

Fisher Scientific Co.
Pittsburgh, Pa.
75N North Area

In attendance

JACK FAWCETT, W. J. RUMICK, H. W. FRACEK.

Fisher is showing its various products including Fisher-Tag oil-testing apparatus, TEL-Meter, Gram-atic Balance, Fisher electrophotometer, and Beckham DU spectrophotometer. Technicians are on hand to discusss and explain performance and application of this apparatus.



Fisher Scientific Co.'s TEL meter.

First National Bank & Trust Co.
Tulsa, Okla.
Adjacent to Main Gate

In attendance

MISS VIRGINIA HALL.

The First of Tulsa is providing free telephone and "page-girl" service plus four bulletin boards for posting messages for its visitors. Radio and television are available at the exhibit's lounge area.

Fleco
Peoria, Ill.
Block C
(See Caterpillar Tractor Co.)

Flint Steel Corp.
Tulsa, Okla.
80-81 Oklahoma Building

In attendance

JACK BILLINGSLEY, D. E. FIELDS, O. E. PEDERSON, STANLEY J. HARSHMAN, WAYNE LAWSON, S. L. SPENCE, HARRY WILLIAMS.

Flint Steel Corp., fabricator of pressure vessels and other processing equipment plus structural steel items for the petroleum industry, is showing colored photographs of some of its products. Technical personnel is on hand to discuss Flint Steel Corp.'s services for the oil industry.

Fluid Packed Pump Co.
Los Nietos, Calif.
1-2 California Building

In attendance

SIDNEY SHUMAN, JOHN BRENNAN, GLENN PETERS, G. R. NEWBOLT, C. D. NEWBOLT.

Seven of its pumps are being displayed by Fluid Packed Pump Co. Included is the Oilmaster Volume Producer, a full-barrel, rod-type, all-metal plunger unit designed to provide the largest practical cross-sectional area for use in a given size tubing. The Volume Producer pump features one-piece alloy steel, hardened and honed barrel tubes, stainless-steel precision fitted seats and balls, reversible, one-piece, pin-both-ends, chrome-plated grooved plungers, heavy cages, and heat-treated machined parts.

Shown for the first time is Fluid Packed Pump Co.'s rod weight compensator. This new product is designed especially for use in deep wells which are produced by rod-drawn pumps. The device is actually a hydraulic counterbalance located below the midpoint of the rod string. By counterbalancing the weight of the lower part of the rod string, the compensator substantially reduced stresses in all of the sucker rods located above it.

Other pumps shown by this company are its "Fluid Packed," Petrol A," "Improved Insert," Tubing full Liner, "Producer," and Unit Barrel lines.

Fluid Power Corp.
Oklahoma City, Okla.
Block 207

In attendance

J. M. BECK, JR., W. C. HUTTON, J. S. MONTGOMERY, Fluid Power Corp.; and J. R. CARLSON, C. E. FINN, Berry Division, Oliver Iron and Steel Corp.

Pumps and motors are used to demonstrate how a hydraulic system transmits power without the use of clutches, drive shafts, gears, and the like. An actual rig compound is in operation, demonstrating how hydraulic drives are used on drilling rigs to operate auxiliaries

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Planned Processing for Profit

One call, *one contract* with Hydrocarbon Research, Inc. will take your plans from idea to operating reality —efficiently, economically and speedily. Hydrocarbon offers many comprehensive services—in one integrated organization.

Hydrocarbon maintains a fully staffed, completely equipped laboratory for the development and evaluation of petroleum refining and process industry manufacturing methods. But, Hydrocarbon services go far beyond research—on into design, procurement, construction and initial operation.

Right now, for example, Hydrocarbon is designing and building process plants in Europe, Africa, South America, and the United States. This work includes plants for crude oil distillation • thermal cracking • thermal reforming • catalytic cracking • catalytic polymerization • cumene manufacture • gas recovery • sulfur recovery • solvent refining • oxygen and nitrogen manufacture • ammonia synthesis.

These Hydrocarbon services are available to you anywhere. You can retain one or all to suit your needs. Write, wire, cable, or telephone Hydrocarbon for further information.

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TRENTON, NEW JERSEY—Hydrocarbon Research, Inc., Development Laboratory, P. O. Box 1419.
PARIS, FRANCE—Hydrocarbon Engineering, S.a.r.L. 44, Avenue des Champs-Elysées, Cable: Hydrocarbon.
DUESSELDORF, GERMANY—Hydrocarbon Mineraloel, G.m.b.H., 15-17 Fuerstenwall. Cable: Hydromin.
RIO DE JANEIRO, BRAZIL—General Heitor Pedroso, Rua da Quintanda, 20, Sala 801. Cable: Bispetro.
NEW DELHI, INDIA—A. R. Palit & Company, Sujan Singh Park, Post Box 671, Cable: Palitar

2160

MINNEAPOLIS-MOLINE
MODERN MACHINERY

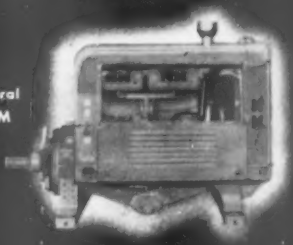
announces the NEW 800-6A ENGINE to offer wider hp range

DESIGNED TO RUN A FULL YEAR WITHOUT SERVICE

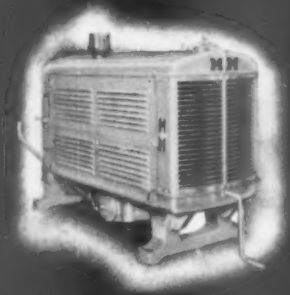
Engineered! Tested! Proved! That's the new MM 800-6A Engine, the power unit that fits perfectly into the MM line of engines which are setting new performance standards throughout the oil industry.

800-6A
129 H.P. on natural gas at 1200 RPM

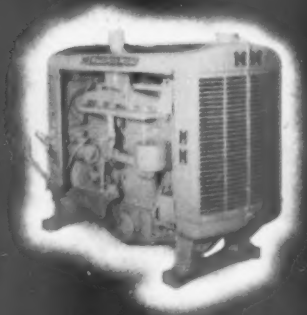
283-4A
46 H.P. on natural gas at 1200 RPM



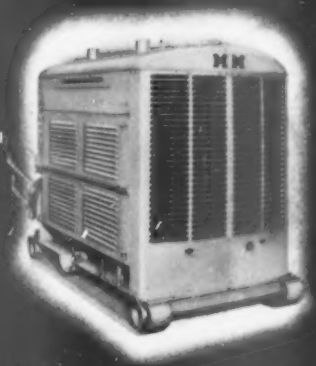
403-4A
62 H.P. on natural gas at 1200 RPM



425-6A
74 H.P. on natural gas at 1400 RPM



605-6A
88 H.P. on natural gas at 1200 RPM



1210-12A
162 H.P. on natural gas at 1000 RPM

THE NEW 800-6A FITS HERE IN THE MM LINE

SEE THE 800-6A AT OUR I. P. E. EXHIBIT, MAY 14-23

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MANUFACTURING & SUPPLY CO.

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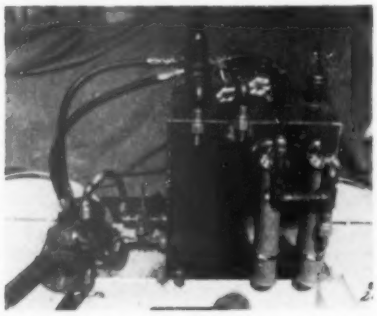
MINNEAPOLIS-MOLINE
MINNEAPOLIS 1, MINNESOTA

such as shale shakers, water pumps, measuring lines, and closing blowout preventers with the source of power from the main engines.

The hydraulic motors and pumps used in the exhibit are manufactured by the Berry Division of Oliver Iron & Steel Corp.



Fluid Power Corp. hydraulic power-transmission system.

Fluor Corp., Ltd.
Los Angeles, Calif.
47-48 Scientific and Technical Building

Completely detailed models of a compressor station and a reformer unit are featured. The compressor-station model incorporates all of Fluor's manufactured products—cooling towers, mufflers, pulsation dampeners, Fin-Fans and gas cleaners. These items are built to scale and arranged as they would be under actual operating conditions. The reformer model includes all related parts, such as piping, finished to scale and in exact detail.

Foote Bros. Gear & Machine Corp.
Chicago, Ill.
14-15 California Building

Foster Cathead Co.
Wichita Falls, Tex.
12-13 Texas Building

In attendance
W. W. FOSTER, J. LEWIS FOSTER, GLEN E. TEDFORD.

This company is showing its full line of catheads along with a Foster jerk-line indicator in actual operation.

Four Wheel Drive Auto Co.
Clintonville, Wis.
Block N

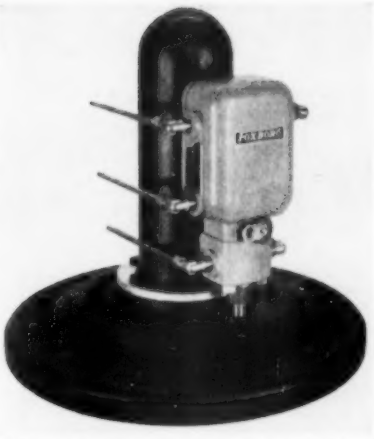
Foxboro Co.
Foxboro, Mass.
78N-80N North Area

In attendance
V. V. IIVY, M. H. WHITE, R. HOSMER, R. MILHAM, R. S. WHITE, J. J. BURNETT, E. R. HUCKMAN, J. J. CONNELLY, E. L. STARK, L. W. PARTEN, R. E. ROGERS, J. M. TEMPLE, J. E. HEWSON, E. W. PITT, W. ROCHELLE, W. A. ROCK, DALE HUGLEY.

Display features centralized process control. A conventional and a graphic-type control panel are each operating a simulated process. The panels incorporate modern instrumentation for remote measurement and control and demonstrate new applications, new control systems, and new instruments designed for centralized control.

In full automatic operation is a coordinated system for the control of unattended pipe-line stations. This panel-mounted system operates a miniature pipe-line network.

The graphic panel, also connected to a model process, serves as a showcase for the new Foxboro Consotrol instruments. A working model of the Foxboro Capacity Dynalog instrument is also displayed. This instrument employs a capacitance cell to detect the difference in dielectric constant of two liquids or liquid and vapor. A part of the display features recent valve developments. A Foxboro Poweractor Positioner is shown with a large sized cylinder-operated Stabilflo valve. Another Stabilflo valve, with continuously connected side mounted handwheel, features a disengaging mechanism.



Foxboro Co. Consotrol controller mounted on Stabilflo valve motor.

A pressure recorder with redesigned element and a new model flow meter highlight the additional pneumatic and electronic instrumentation on display.

France Packing Co.
Philadelphia, Pa.
72 Texas Building

In attendance
D. W. PEDRICK, W. B. FRANCE, E. H. CUMMINGS, J. V. MAILEY, FRED THILENIUS, B. L. MORGAN, ANDREW C. ELDER.

Equal coverage is given to France Packing Co.'s various products. Displayed are packing cases, plus replacement packing rings in the various materials for different services. One of the display packings is constructed of plexiglass, to permit visual inspection of all the component parts of a completely assembled unit. Various sizes of bakelite segmental gas-compressor piston rings, liquid pump piston rings, and a complete line of asbestos-bakelite valve plates are also shown. Representative samples of steel compressor-valve plates plus a line of industrial-power piston rings are displayed in various types of standard rings, including expander type oil rings and chrome-plated, compression rings.

Franks Machine Co.
Enid, Okla.
Block 104

In attendance
W. A. WHITNELL, WALTER SCHMIDT, CLAYTON VOTH, JOE FRANKS.

This company is featuring its KC-45-H drill and power-takeoff swivel.

Franklin Supply Co.
Chicago, Ill.
Block 121

This company is featuring an animated display depicting all branches of the petroleum industry. A 24-minute transcribed narration telling the petroleum industry's story forms a part of the display. This exhibit, with accompanying sound story, was conceived and financed in Chicago by the Oil Industry Information Committee.

A scale model of Louisville Refining Co.'s fluid catalytic cracking unit is also displayed. This unit was designed by Universal Oil Products Co., with material procurements by Franklin Supply Co.

Franks Manufacturing Corp.
Tulsa, Okla.
Block Z

In attendance
R. M. WHITE, LOUIS SEARS, TOMMY KNOBLOCH, ALBERT HASTINGS, JEFF GRAY, SWEDE BRANSON, ALBERT WAGNER, HILMAR HEINRITZ, ENID DUGGINS, JOE RUTLEDGE, A. J. ROGERS, VERN ALLEY, K. M. LAMER, TOM STRINGER, DICK JONES, JOE WINTER, BILL PITEZEL, CARL WHITE, JR., C. C. SIMMONS, S. E. CORRY, JOHNNY LEYH, W. B. WOODY, DON TURNER.

This firm is showing its new "Clipper Hoist," a self-propelled servicing unit with a service rating of 13,700 ft. of 2⅞-in. wet-string tubing. A Kenworth alligator-type chassis allows the rig to be headed into location and a six-cylinder diesel engine, operating through a torque converter, powers the unit. A full-shifting, three-speed, hydraulically actuated transmission furnishes power to the chassis and to the hoisting winch. Franks final friction drum clutch transfers power from prime mover to the hoisting winch.

Franks "Telemech" remote fingertip controls permits operation and control of the hoisting winch, engine-transmission clutches, and brakes, 25 ft. away from the well head. Sandreel controls are located on a folding elevated platform at side of hoist, for maximum visibility of well head and drum.

The derrick is Franks 93-ft., 200,000-lb. capacity, telescoping type. It is raised, lowered, and extended by two two-stage double-acting hydraulic cylinders with safety checks in both directions. Total load of the unit spreads over almost 40 ft. of highway.

Franks Manufacturing's "Clipper" hoist, designed for heavy-duty work.

Frost Airborne Survey Corp.
Tulsa, Okla.
Scientific and Technical Building

Fulton Sylphon Division of Robertshaw-Fulton Controls Co.
Knoxville, Tenn.
170 Oklahoma Building

Gardner-Denver Co.
Quincy, Ill.
Block 122

In attendance
E. F. SCHAEFER, G. V. LEECE, A. H. JONES, D. O. MEEK, C. L. RUYLE, O. C. KNAPHEIDE, ADOLPH SIMSON, V. W. McQUARY, M. F. BAECKER, FORREST PITZENBERGER, R. J. BAUER, D. E. KIRCHER, R. P. HECKENKAMP, B. R. SHEETS, R. L. McLAIN, J. L. SPEECE, G. W. GUTEKUNST, C. W. McKEY, M. G. HANDLY, M. B. MORRISETTE, O. G. JANSEN, GEORGE NIEHOFF, J. E. RUYLE, WM. NEESE, J. E. GRANT, H. GERHAUSER.

Gardner-Denver has on display three models of its duplex power pumps for slush and cement core drilling, geophysical, and seismograph service. In addition are shown a Triplex slush pump, stationary and tank-mounted

Pair of Pipe Line Profitmakers!

Here are two UNIT TRENCHOES speeding up the ditching operation on a cross country pipe line project. This type of operation is familiar to pipeline contractors because they know, when the going gets tough, it takes a rugged machine to do the job efficiently. UNIT TRENCHOE is this type of machine. Its fast operating speed is a real time and money saver on pipe line work. UNIT'S exclusive mechanical features, together with the streamlined FULL VISION CAB, make UNIT a front line machine in the pipe line construction field.

Then there are Mobile UNITS for jobs along the right-of-way. Mobile equipment offers road travel speed, plus sufficient traction to operate in rugged pipe line terrain.

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½ or ¾ YARD EXCAVATORS...CRANES UP TO 20 TONS CAPACITY
CRAWLER OR MOBILE MODELS . . . GASOLINE OR DIESEL

All Models Convertible to ALL Attachments!

I.P.E. EXHIBIT DIRECTORY

compressors, portable air compressors, centrifugal pumps, plus rock drills, concrete breakers, and the "Twindril," along with an assortment of air tools and starting air motors.

Two new Gardner-Denver oil-field pumps are on display at the Continental Supply Co.'s exhibit.

Garlock Packing Co.
Palmyra, N. Y.
59-60 Texas Building

In attendance

GEO. L. ABBOTT, LOUIS MOHN, F. C. THORN, A. C. GUSTAFSON, FORD WILDERS, J. W. BOERNER, J. M. FOLEY, G. C. WIEDA, A. B. OWEN, P. M. NUCKOLLS, J. H. ROCHE.

Garlock's exhibit comprises a varied line of mechanical packings of specific interest to the petroleum and petrochemical industries. In the display are the familiar forms of braided, extruded, and sheet packing, of asbestos, cotton, nylon, flax, soft metals, and combinations.

Among other interesting items is Teflon and somewhat related to Teflon, the new Silicone packings. On display also are types of metal packing for application where extreme pressures and extended service between overhauls is expected.

Illustrated is the Garlock expansion joint for controlling expansion and contraction in pipe lines and also as a vibration damper.

Molded products of rubber, thiokol, buna and other compounds in the form of cups, valves, polished-rod rings, and other forms are shown, as well as a line of leather cups, Vs, gaskets, valves, and specialties.

Garlock expansion joint for controlling expansion and contraction in pipe lines.

Garrett Oil Tools, Inc.
Houston, Tex.
56-57 Kansas Building

In attendance

H. U. GARRETT, E. D. McMURRY, HAROLD L. BROWN, B. F. KRAUSE, DON M. BROCK, GEORGE CONNER, J. W. LYON, C. M. PETERS, KEN WALKER, VERNON SCOTT.

Garrett is displaying a completely new line of wire-line, gas-lift production equipment. Included are the company's "D-2" "D-3" mandrels, which permit one or two gas-lift valves to be placed in operative or inoperative position while in the hole, through means of wire-line actuating tools. Another new product, shown for the first time, is the "BP-450" mandrel which allows installation and removal of any number of gas-lift valves with wire-line tools. These three items are designed to eliminate the necessity of pulling tubing in order to inspect and repair the gas-lift valves. Also on display is the Garrett orifice valve, a wire-line-actuated

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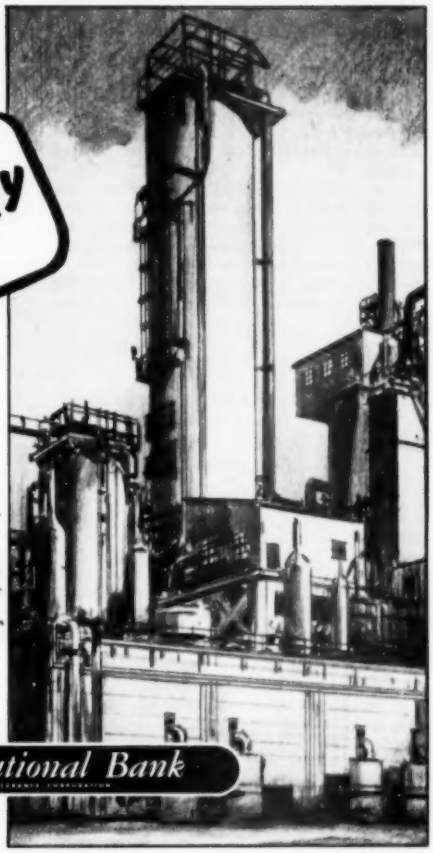

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PARKER Leakproof Tube Fittings
PHELPS-DODGE Admiralty Tubes and Copper Tubing
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BOX 555 DUNBAR, WEST VIRGINIA

tool designed to be used above the static fluid level in gas-lift installations, to provide a means of circulating or unloading when necessary to completely fill the well with water or mud.

The Garrett circulating valve, another new wire-line tool, is designed to permit opening of communication between the tubing and casing at any desired time, and to permit the same communication to be closed after it has served its purpose.

For the pipe-line industry, Garrett is showing several sizes of its pressure-relief valves, with cutaway sections showing details of construction.

Gar Wood Industries, Inc.
Wayne, Mich.
Block 118

In attendance

E. B. HILL, H. H. HIPPLER, A. F. DRIES, STEPHEN CZERWINSKI, E. W. HAZZARD, W. C. ROBERTSON, R. S. JAY, GEORGE AMES, R. M. STEEGMAN, D. J. DAVIS, H. N. NELSON, W. M. McALLISTER, D. C. ROYCE, G. M. TAYLOR, GEORGE MILLER, W. S. BLAKESLEE, ROSS MILLER, LEO BROWN, E. R. CURRY.

Gar Wood Industries, Inc., along with its associated companies, is exhibiting a line of oil-industry construction equipment.

National Lift Co. is showing its one-man, hydraulic loading lift for pickup trucks. The Wayne Division has on exhibit five different models of its oil field winches.

Gar Wood's Findlay Division is showing seven of its products. In this group are three different models of Buckeye ditchers, a ¾-yd. backhoe and a similar capacity truck crane. Added to these Findlay Division products is its cable-operated Dozecaster and a cable control unit mounted on an Allis-Chalmers tractor.

National Lift Co.'s Lift-O-Matic elevating tailgate.

Gaso Pump & Burner Manufacturing Co.
Tulsa, Okla.
Block W

In attendance

H. F. STOVER, T. H. FLANAGAN, H. A. WIENECKE, A. L. MORRISON, L. E. HELMSTETTER, J. L. JOPLIN, N. R. VREELAND, R. L. JAEGER, E. A. HALL, D. I. WINTERS, W. L. SOMNER, H. G. LAWRENCE.

Gaso is showing six different models of its pumping units. Each unit is individually powered. Drivers include a variable-speed, U. S. electric motor, Caterpillar diesel unit, plus LeRoi, Allis-Chalmers, Waukesha, and Buda gas-gasoline engines.

Gates Rubber Co., Sales Division, Inc.
Denver, Colo.
9-10 Texas Building

In attendance

LOWELL KESSLER, JOE NOELLSCH, ROY F. KINNAN, BARNEY SNAPP, MEL NASBY, ED COLE, FLOYD H. FAIR, LOREN KOLSTE, AL MARVIN, ROGER JENNINGS, JESSE SANDERS, DIXIE HOWELL, BILL SHELTON, WHITEY FOSTER, LES OSBORNE.

This exhibit is focused on the company's specialized research as related to V-belt drives, hose, and molded rubber goods for oil-industry applications. A large display features a Rib-Top belt for use with idlers on mud pump drives, and the company's Super belt, along with various sizes of V-Belts and all types of industrial hose. Adequate highly trained technical personnel are available to discuss problem on V-Belt transmission, hose, or other industrial rubber products.

Gatke Corp.
Chicago, Ill.
23-24-25 California Building

General Controls Co.
Glendale, Calif.
13 California Building

In attendance

W. A. RAY, EVERETT ROSSOW, O. D. SHADDOX.

General Controls airmotor valve is the feature of this exhibit. These airmotor diaphragm-type operators are designed to operate any valve, normally open or normally closed, three-way or slides using air-to-open, air-to-close in the chamber above the diaphragm. This operator is especially suited for modulating control and may be used with valve positioner, time, or other instruments where accurate flow control is desired.

General Controls field installation.

General American Transportation Corp.
Chicago, Ill.
5-6 Oklahoma Building

In attendance

H. D. SKYRM, J. F. OLSEN, R. W. NILL, R. H. LAMBERTON, J. R. CAMP, J. C. WALLACE.

Exhibit features Wiggins Hidek and Lodek floating roofs. A central display panel shows cross-sectional reproductions of these floating roofs, plus a Wiggins floating roof in actual operation. A 6 by 9-ft. panel on which is mounted an illuminated map of the United States shows the various offices, manufacturing plants, and other installations of General American. Two easels, one with blueprints of Wiggins Conservation Structures, the other listing the basic specifications covering floating roofs, are also displayed. Color transparencies, lighted from within, show various installations of Wiggins floating roofs throughout the country.

General Electric Co.
Apparatus Division
Schenectady, N. Y.
241-244 Oklahoma Building

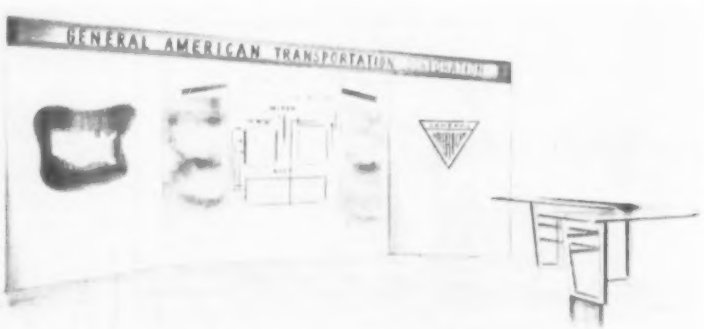
In attendance

J. J. BROUSSARD, A. E. HOLLAND, S. McKINNEY, J. N. POORE, K. P. KUHLMAN, E. K. NOCK, C. W. BILLINGS, H. L. TREDENNICK, J. L. ROCKWELL, C. M. GORDON, W. F. HILDEBRAND, E. F. PATTERSON, R. G. KNAUS, J. J. MILLER, H. J. OWEN, M. F. MAYER, H. L. MOAK, E. LANIGAN, I. E. WELSH, W. S. LEAKE, R. W. E. CARUTHERS, J. C. WYCHE, S. G. NAYLOR, C. M. WRIGHT, L. J. GEIGER, W. F. THIESSEN, E. B. TURNER, W. B. WILSON, W. A. WIRENE, J. B. LAND, T. B. SANDERSON, R. B. KURTZ, R. D. ANDREWS, C. S. SCOTT, A. A. KAYE, N. W. BENCE, A. R. LLOYD, G. M. WATTERS, J. JACKSON, R. E. DONNELLY, K. L. RECTENWALD, A. G. SCHILLING, B. J. FOY, N. L. BOULDEN.

General Electric Co. Apparatus Division is featuring engineered electrical systems for the petroleum industry. A panel display shows a 7½-hp. G.E. Tri-Clad motor being operated through a pumping and sequence restarting control panel with undervoltage protection. A 3-phase, 60-cycle capacitor is included in the pumping setup so that it can be cut into or out of the circuit. Appropriate metering devices show how power factor can be improved and motor-current costs reduced by use of a capacitor. Another highlight of the exhibit is a large schematic of the G.E. gas turbine for gas-pipe-line pumping.

A static display of switchgear features the G.E. swingout AK-1 breaker with explosion-proof case, its SB-1 switch, and a substation model. Visitors may measure small amounts of electricity in an iron bar by using several hook-on instruments in the meter display. Special instruments such as a load visualizer, a time switch for oil-well pumping, and a Zahn viscosimeter for production measurement of fluid viscosity also is available for inspection by exhibit viewers.

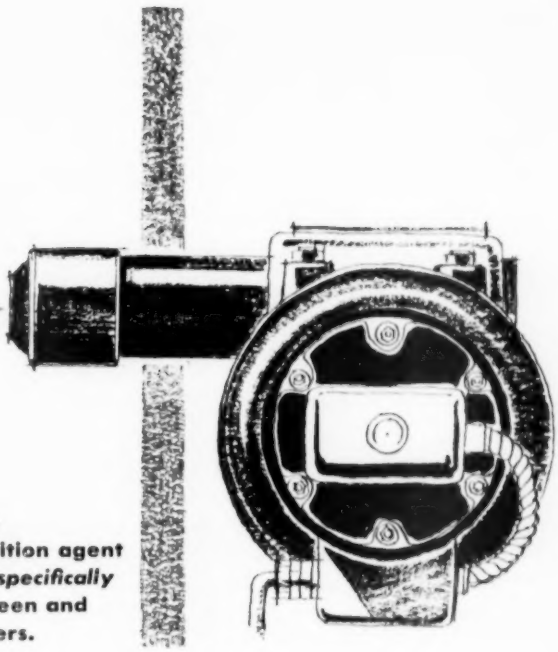
G.E. Tri-Clad motors are being exhibited



Architect's sketch of General American Transportation exhibit.

Introducing...
SANTOLENE H

Stops Costly Screen and Filter Clogging of Oil Burners 4 Ways



SANTOLENE H is a newly developed Monsanto addition agent for distillate furnace oils *specifically designed* to overcome screen and filter clogging in oil burners.

1. **KEEPS FUEL OIL SLUDGE AND SEDIMENT LOW** by inhibiting progressive polymerization of unstable elements initially present in oil.

2. **REDUCES DEPOSITION** of sludge and sediment on burner parts by means of a unique surface action.

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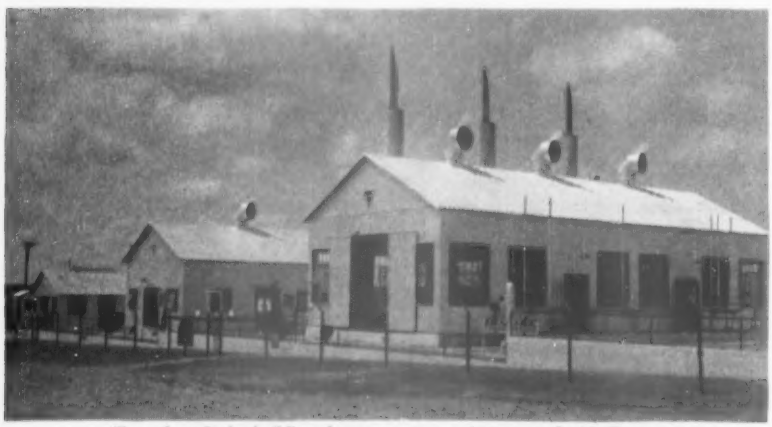
One of 18 Butler buildings used to house pumping engines at a Kansas location.

From crude to consumer, when you need a building your best bet is Butler! *Three* basic types let you specify the most economical construction for each building purpose. Put a Butler building up to stay, or move it with the drilling rig . . . your Butler building delivers *lasting* service. Here are some of the reasons why:

- Aluminum or galvanized covering
- Clear spans from 4 to 70 feet in single units; multiples to any width
- Erected in hours or days instead of weeks
- Bolted construction for greatest strength; yet easily disassembled for moving
- Lightweight for easy trucking to or from off-highway locations
- Maximum wind resistance and firesafety
- Sealed against rain, snow, dust
- Appearance that's a credit to any installation



These three Butler buildings form a pressure maintenance plant in Texas.

Butler buildings serve the oil industry • Rig Houses • Pump Houses • Engine Houses Tool Houses • Machine Shops • Field Offices • Pumping Stations • Power Stations Gathering Plants • Flowing Plants • Supply Depots • Material Depots Warehouses • Garages • Meter Houses

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in operation under extreme conditions of dust, moisture, and corrosive atmospheres. Speed of ACA motors may be varied with a new motor control center or a rheostat mounted on the motor.

A cutaway model of a G.E. mechanical drive, single-stage steam turbine is operating with a small adjustable-speed ACA motor as its prime mover. The cutaway shows how inner parts of the turbine operate and the flow of steam and lubricant.

General purpose control apparatus on display include pushbutton and selector switches, starters for N.E.M.A. 7a enclosures, and oil-immersed starters in N.E.M.A. 8 enclosures —all explosionproof.

General Electric Co., Electronics Division

Syracuse, N. Y.

22-26 Oklahoma Building

General Electric Co. is displaying its latest microwave equipment for communications, remote control, and transmission of printed material. A miniature microwave system with movable receiver is set up to demonstrate the actions of microwaves. Also being demonstrated is the transmission of written messages, or pictures, over the microwave system.

Regular production units of some of General Electric's microwave equipment are on display. In addition, two-way radio equipment for use in connection with microwave systems, or alone, are shown.

General Metals Corp.

San Francisco

Block 122

General Motors Corp.

Detroit, Mich.

Block 10

Allison Division, Indianapolis, Ind.; Chevrolet Motor Division, Detroit, Mich.; Cleveland Diesel Engine Division, Cleveland, Ohio; Delco-Remy Division, Anderson, Ind.; Detroit Diesel Engine Division, Detroit, Mich.; Diesel Equipment Division, Grand Rapids, Mich.; GM Overseas Operations Division, New York, N. Y.; GMC Truck & Coach Division, Pontiac, Mich.; Harrison Radiator Division, Lockport, N. Y.; Hyatt Bearings Division, Harrison, N. J.

For listings of personnel in attendance and products exhibited, see respective divisions of General Motors Corp.

General Motors Overseas Operations Division, General Motors Corp.

New York, N. Y.

Block 10

In attendance

EDMUND BURKE, JR., FRANK CURNEN.

General Motors Overseas Operations' exhibit is designed to show facilities available in overseas territories throughout the world for handling petroleum industry needs. The use of G.M. Diesel equipment in oil-field operations is illustrated by large, portrait-type photographs of actual scenes in such widely separated fields as Saudi Arabia, Italy, France, Venezuela, Indonesia, and Mexico. While the display depicts the equipment used mainly in petroleum field operations, it also carries with it the story of other products, such as vehicles and appliances.

G.M.C. Truck and Coach Division, General Motors Corp.

Pontiac, Mich.

Block 10

G.M.C. Truck and Coach Division is exhibiting three trucks on which are mounted

special oil field equipment. One of these trucks is G.M.C.'s largest unit, capable of hauling a gross combination weight of 100,000 lb. It is powered by a six-cyclinder G.M. diesel engine and is equipped with an oil-field, general-purpose body manufactured by Truck-Trailer Supply Co., of Stafford, Kans.

A second truck, rated at 70,000 lb. gross combination weight, is equipped with a 503-cu.-in. G.M.C. gasoline engine developing 200 hp. This chassis carries an oil-well servicing rig produced by Franks Manufacturing Co. of Tulsa.

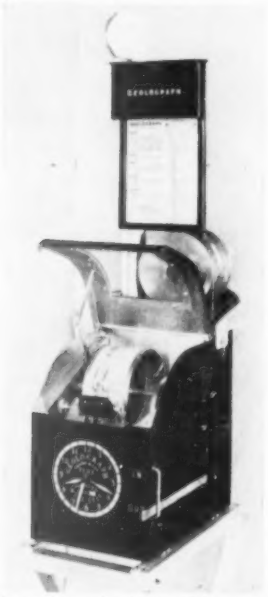
The third G.M.C. truck is equipped with an oil-field, general-purpose body installed by Leland Equipment Co., of Oklahoma City. This unit is rated at 45,000 lb. gross combination weight. Its 145-hp. engine is the same type now powering the latest U. S. Army 6x6 trucks in Korea.

Geolograph Co., Inc.
Oklahoma City, Okla.
49 Scientific and Technical Building

In attendance

T. W. ROBISON, P. B. NICHOLS, H. T. BROWN, A. J. SHORNEY, T. F. PIERCE, JR.

This company is displaying its mechanical well-logging unit and featuring its new spring retriever.



Geolograph mechanical well-logging unit.

Geophysical Research Corp.
Tulsa, Okla.
51 Scientific and Technical Building

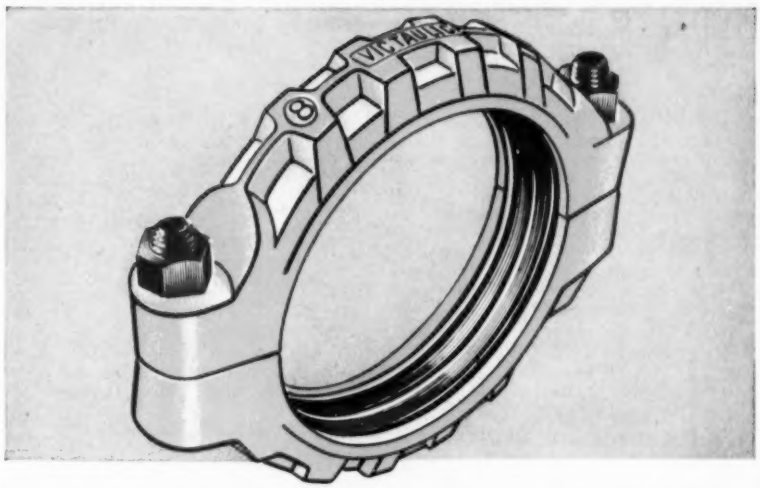
In attendance

W. B. KENDALL, JOHN S. SHALEEN, E. W. McMILLAN.

This exhibit consists of a display of Amerada-type bottom-hole recording pressure and temperature gages. Cutaway models are shown along with pressures gages manufactured by Geophysical Research Corp. dating back to the middle 1920's.

Glass Plastics International Corp.
New York, N. Y.
Block 207

Goode Equipment Co., Inc.
Houston, Tex.
81N North Area



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I.P.E. EXHIBIT DIRECTORY

B. F. Goodrich Co.
Akron, Ohio
20N North Area

Exhibited are dissected samples of various types of hose, cut away so that the construction can be examined. Displayed are Highflex rotary drilling hose, sample of the Permalock coupling, mud suction hose, gasoline discharge, and suction hose. Other types of hose include water, steam, welding, fire, all-purpose, hydraulic control, and others. A sample of the B. F. Goodrich Grommet V-belt is also displayed.

Goulds Pumps, Inc.
Seneca Falls, N. Y.
90N North Area

In attendance

C. L. FORSHEE, P. J. OLMSTEAD, W. H. PLOWMAN, J. P. LONBERGER, T. G. KELLEY, H. J. McDONALD, G. T. HOSEA.

This company is featuring a new line of single-stage double-suction, centrifugal pumps comprising 19 sizes with capacity ranges up to 6,400 g.p.m. and heads up to 260 ft. An open rotating model of this new line is on display. Also shown are other Goulds oil-industry pumps.

The new pumps are designed with a wide interchangeability of parts, plus short bearing spans and conventional stuffing boxes or mechanical seals can be used to best fit conditions of service. A locking device on shaft sleeves permits change of rotation in field without construction alterations. Other features of the new pumps are renewable stuffing-box bushings, bearing housings sealed against moisture and dirt, cowl-type glands suitable for use with quenching liquids, stainless-steel impeller keys, Teflon water-seal rings, die-formed stuffing-box packing, and corrosion-resistant gland bolts.

The new Goulds pumps incorporate a variety of design features.

Graver Tank & Manufacturing Co., Inc.
East Chicago, Ind.
33 Silver Lane

In attendance

H. A. DENNIS, H. L. O'BRIEN, H. A. HOTHAN, R. F. MILLETT, J. E. FOGARTY, E. R. FOGARTY, E. G. VAIL, S. E. ARNOLD, W. T. HUDSON.

Graver's display consists of plastic models of its expansion-roof tank, a manifolded expansion system, double-deck, floating-roof tank and its center-weighted, floating-roof tank. These plastic models, hand-crafted to scale, are designed so that they can be operated realistically. They demonstrate the vapor-saving features of designs in the storage of gasoline. The model of the expansion-roof unit is expertly detailed and shows clearly the features of Graver's liquid seal.

Included is an expansion-roof, tank-farm model, composed of four small tanks, three cone roofs manifolded by vapor lines to one expansion roof. By means of this model, the principle of balanced pumping is demonstrated.

The three large models, built to one-half the actual size of Gravers standard steel tanks, are 30-in. in diameter.

Gray Tool Co.
Houston, Tex.
15 Park Lane

In attendance

TY CHILDRESS, JOHN LEMLEY, JOHN WATTS, BOB McGOWAN, HARLAM HOWELL, EMMETT HEATH, CHARLIE RICHARDS, JOHN SLACK, LYNN CORHWELL, RAY KOLLER, FRABLIE HALL, L. B. LEFEVRE, FRED ALLDAY, E. E. HILL.

This exhibit features an entirely new type christmas tree designed for safety at all high pressures. Also displayed are valves and fittings with special Graylock connections.

John A. Green Co.
Dallas, Tex.
167 Oklahoma Building

In attendance

BRUCE M. WILLIAMS, FRANK H. MACDONALD, JOHN A. GREEN.

Electrical and electronic equipment plus components which have direct application to oil industry operations are displayed by John A. Green Co.

One of the new electronic instruments presented is the Ease analog computer manufactured and marketed by the Berkeley Scientific Division of Beckman Instruments, Inc. This instrument can solve many difficult problems, including nonlinear differential equations. Typical flow problems, reservoir problems, and seismic problems are being solved at this exhibit to demonstrate the instrument.

Other demonstration instruments in operation are those manufactured by Berkeley Scientific, Browning Laboratories, Electro Products Laboratories, Krohn-Hite Instrument Co., Furst Electronics, Hunter Manufacturing Co., Keithley Instruments, and Technology Instrument Corp. One part of the exhibit incorporates a complete system, manufactured by Calidyne Co., for testing seismometers.

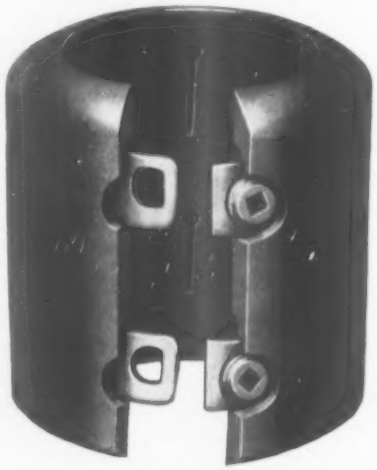
In addition to the instrument display, various types of electrical and electronic component parts manufactured by companies represented by John A. Green Co., are being shown.

Gribbin & Baylor
Houston, Tex.
191 Oklahoma Building

In attendance

W. B. BAYLOR, F. P. GRIBBIN, JOHN MICHAEL, LEROY BURNER, H. L. ZINKGRAF, J. E. RADECK, R. E. HENRY.

This company's featured product is the new Vetco Off-N-On protectors which can be locked on or unlocked from drill pipe in from 8 to 10 seconds. These protectors are wrapped around the drill pipe and then fastened by a positive cam lock which is integral with the protector itself. Alloy-steel bands form a skeleton for the protector, around which rubber is molded. When closed, the rubber is compressed between the metal bands and the pipe for a tight grip. The forged cam lock is built right into the protector. The cam locks may be engaged easily by hand, and may be locked tightly by means of a "T" handle wrench.



Vetco Off-N-On Protector.

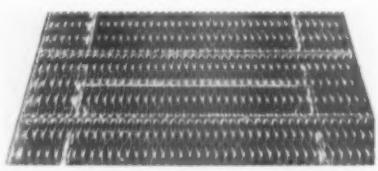
Green Contracting & Engineering Co.
Wichita, Kans.
21N-22N North Area

Grip-Strut Division, The Globe Co.
Chicago, Ill.
93N North Area

In attendance

J. W. HILL, G. L. HOYT, E. A. ASBURY, HUGH KELLEY, KEITH UEHLING, W. A. SANDERS.

This company is featuring its Grip-Strut product, a new type of grating for walkways, stair treads, platforms, and similar applications where nonskid surfaces are desired. Grip-Strut is made from a single piece of material without welding or riveting and none of the material is removed by punching.



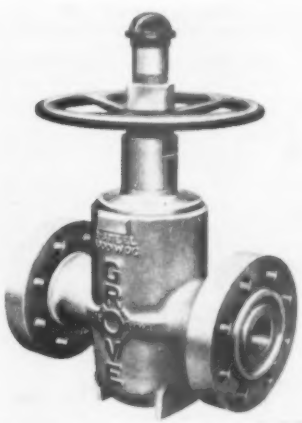
Closeup of Grip-Strut, new type of grating.

Grove Regulator Co.
Oakland, Calif.
36-37 Texas Bldg.

In attendance

M. H. GROVE, V. C. GALLMAN, W. G. FOLSOM, J. D. HICKS, E. H. McMENEMY, J. A. RECORDS, L. S. ROBB, C. E. RODELANDER, L. R. VAN ARSDALE, F. H. WEHRMAN, CARLETON CLYMER, L. D. WEST.

The featured item of this display is a new Serie "G-2" gate valve. In addition the exhibit includes Grove's Powreactor dome regulators, Flexflo valves and regulators, and Series "T-2" and "V-2"-seat O-Ring valves.



Grove Regulator Co.'s new production valve.

To know how good valves can be, install valves that are known to be good

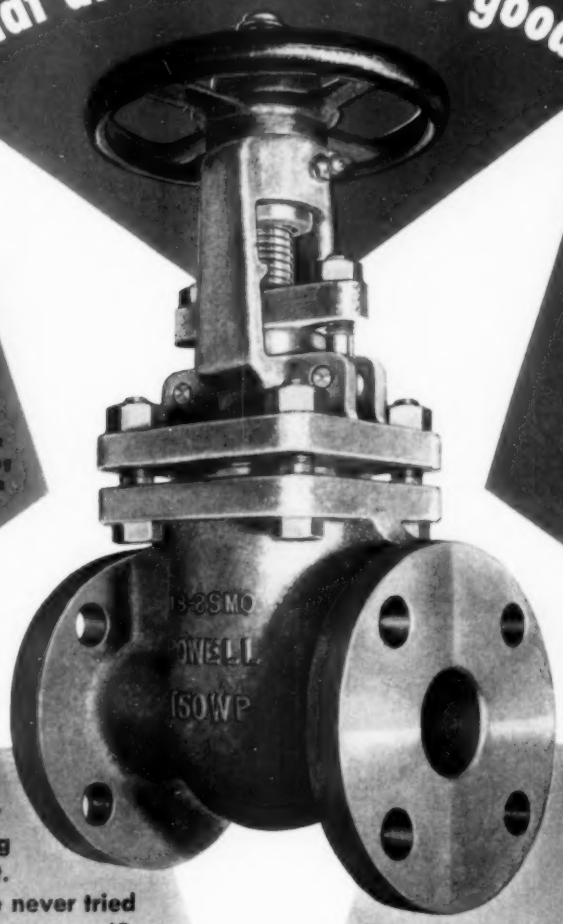
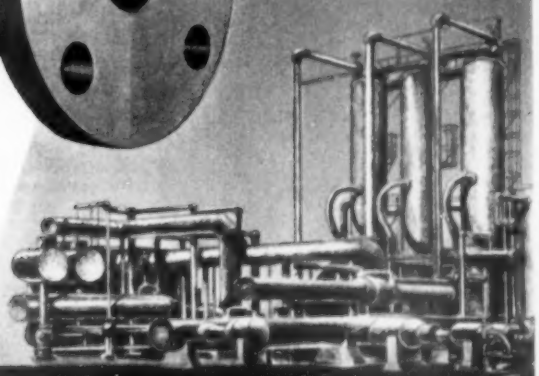


Fig. 2491—Stainless Steel O. S. & Y. Gate Valve for 150 pounds W. P. Available in many other corrosion-resisting metals and alloys. Also made with screwed ends.

DEPENDABLE VALVES SINCE 1846

If you already have Powell Valves in your lines, you are enjoying flow control at its best. But possibly you have never tried valves engineered to meet specific service conditions under which they must operate. To find out how good valves really can be, install Powell.

The Wm. Powell Company
Cincinnati 22, Ohio



POWELL

BRONZE, IRON, STEEL AND CORROSION-RESISTING VALVES

I.P.E. EXHIBIT DIRECTORY

Grip-Tite Manufacturing Co.
Winterset, Iowa
23N North Area

In attendance
C. E. JOHNSON, PAUL WEBER, H. R. OGBURN

Company is showing a full line of its heavy-duty, positive-expanding, oil-field anchors along with its pipe-line anchor assembly and heavy-duty rock anchors. This display incorporates a full line of earth and rock anchors and includes Grip-Tite's line of utility and fence anchors to meet a wide variety of anchor needs.

Gruner & Co., Inc.
Ponca City, Okla.
24N North Area

Guiberson Corp.
Dallas, Tex.
217-218 and 233-234 Oklahoma Building

This firm is exhibiting its new kelly-drive, rotating, drilling head with chain-drive blowout preventer. This head provides control for reverse circulation, conventional circulation, or back-and-forth rocking.

Other equipment exhibited includes a blowout preventer, swabs, packers, safety joints, spiders, gas lift equipment, savers, strippers, unions, and the Guiberson, hydraulic-hold-down anchor. Also shown for the first time is a new line of hydraulic pump anchors for single or dual strings and swab relief valves of entirely new design.

Guiberson's new rotating drilling head.

Gulf Publishing Co.
Houston, Tex.
149-150 and 181-182 Oklahoma Building

Gunnison Homes, Inc.
New Albany, Ind.
Block 2
(See United States Steel Corp.)

Gustin-Bacon Manufacturing Co.
Kansas City, Mo.
26-27 Silver Lane

In attendance
D. W. MARTIN, M. F. HAUSERMAN, W. F. TEAGUE, P. O. CRAIG, J. L. MOHUN, W. M. COOK, R. C. EBBERT, W. K. DYE, H. J. SMITH, G. R. McMULLEN, G. I. WYRICK, H. O. SHEIDLEY, H. M. GRANT, C. C. SPRINGER, V. F. HALLIBURTON.

A new pipe insulation made of fine glass fibers is being shown. Known as G-B Ultrafine pipe insulation, the material is lightweight, resilient, and is not affected by moisture. This company is also showing its line of Rolagrip and Gruvagrip pipe couplings, for applications throughout the industry. A new grooving machine for grooving pipe, to be coupled with Gruvagrip Couplings, is being demonstrated.

Halliburton Oil Well Cementing Co.
Duncan, Okla.
Block K and Adjacent Areas

In attendance
W. R. McCLENDON, L. D. CAMPBELL, L. B. MEADERS, R. R. EMERY, GROVER KILGORE, WM. D. OWSLEY, W. B. TAPPER, H. P. CONROY, F. R. WHITTEN, R. G. KELLY, HUBERT NORTHCUTT, F. A. JOHNSON, C. L. WIMBERLY, O. L. STALCUP, R. W. MITCHELL, R. B. BEDDINGFIELD, H. P. HEARN, C. T. McGUIRE, P. C. MAYFIELD, E. L. PARAMORE, TRAVIS PHILLIPS, J. L. McBRIDE, J. E. LACY, D. R. YAGER.

Halliburton's exhibit features its new trailer-type, high-pressure cementing unit. In addition, Halliburton is showing its new-type Hydro-Spring testing tool. New exhibits are Pozmix cements, Hydrafrac, MCA, and Morflo, along with new, production-improvement techniques put into service in the past 2 years. Halliburton is also showing its service tools and other manufactured products. As a note of historical interest a replica of a 1920 horse-drawn cementing unit is being shown.

Happy Co.
Tulsa, Okla.
Block J and west of Block U

In attendance
HAYDEN PARRENT, E. L. WILLIAMS, R. B. RUNDLE, BEN E. SHELTON, JACK M. SIMPSON, R. F. SNOWDEN, F. E. RHOADS, C. C. STANLEY, BILL HOLBERT, PAUL E. MAHAFFEY, LEO C. KING, ROY C. LINDLEY, JOHN E. MAHAFFEY, JOHN W. RITTER, ED ALLAN, F. W. ROBSON, W. F. ROBERTS, LELAND E. ALLEN, HAROLD R. ASHWORTH.

At its location west of Block U, Happy Co. is showing a variety of its products along with a group of oil-industry equipment produced by other manufacturers. Happy Co.'s new products shown at this location include "Adjustocranks," Crank Guard Wrist-pin pusher, volume tank and fuel cutoff valve.

Displayed at Happy Co.'s Block J location is a line of cooling and condensing equipment and other oil-country items. The new products are an atmospheric-section cooling coil, a hydraulic fan drive, automatic fan-pitch adjuster, and a vertical geared-head-motor fan drive.

Harbison-Fischer Manufacturing Co.
Fort Worth, Tex.
8 Texas Building

A new "double-displacement" subsurface rod pump is being introduced by Harbison-Fischer. Working models are set up to show the pump's relative efficiency. This new pump has just been placed on the market.

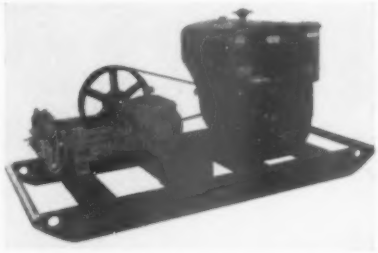
Harbison-Fisher's "Texas Stripper" rod pump, its three-tube rod pump, and "Flexite" plunger for tubing pumps are also displayed by working models.

Shown in addition are related production equipment for pumping wells including balls and seats, stuffing boxes, polished rods, rod guides, oil savers, plus other items made by this company.

Harley Sales Co.
Tulsa, Okla.
Block 4

ROY O. NEAL, BOB R. NEAL, GEORGE KLUPPEL, RUSSELL PRIDE, JOE OWEN, DICK JOHNSON, Harley Sales Co.; and PHIL NORTON, RAY FELLOWS, T. W. PERSCHBACHER, Wisconsin Motor Corp.

Harley Sales Co., and Wisconsin Motor Corp. are showing Wisconsin air-cooled heavy-duty engines. In addition, Harley Sales Co. is showing various units powered by Wisconsin engines. Some of these units are Roper, Goulds, Blackmer, Worthington, Gardner-Denver, Peerless, Ampco, and Deming pumps. Others are electric lighting plants and compressors.



Deming triplex pump powered with Wisconsin air-cooled engine.

Harnischfeger Corp.
Milwaukee, Wis.
Block 203

In attendance
HENRY HARNISCHFEGER, BERNARD PRATTE, MELVIN MONSLER, BILL STEPHENS, FRANK EDWARDS, JAMES ENOCHS, ROBERT MILLER, EDWARD MITCHELL, CUTH POWELL, ROBERT SAWYER.

Excavators, electric hoists, diesel units, and welders, are being displayed. Two of the company's Miti-Mite truck-crane units, one mounted on a P. & H. carrier and the other skid mounted, are displayed. Also shown is a 35-ton truck crane equipped with a 100-ft. boom and 30-ft. jib. Shown in addition is a ½-yd. crawler trench hoe.

One each of the company's Zip-Lift and Hevi-Lift electric hoisting units are displayed. A 75-kw., 60-cycle diesel powered generator set and a Twin-Six diesel engine along with a display model diesel engine are also exhibited.

The display of P. & H. welders includes a water-cooled gas unit and a rectifier unit. An exhibit of welding accessories includes a variable-speed positioner, electrodes, and a low-hydrogen electrode display board.

A P. & H. (Miti-Mite) truck crane equipped as a trench hoe. Its all-welded boom gives a digging depth of 14 ft.

Harrisburg Sales & Service, Inc.
Houston, Tex.
96 Texas Building

In attendance
C. B. CALDWELL, C. R. EASON, JR., LEROY NIX, R. T. STEWART, C. R. SINCLAIR.

Among the various products displayed by

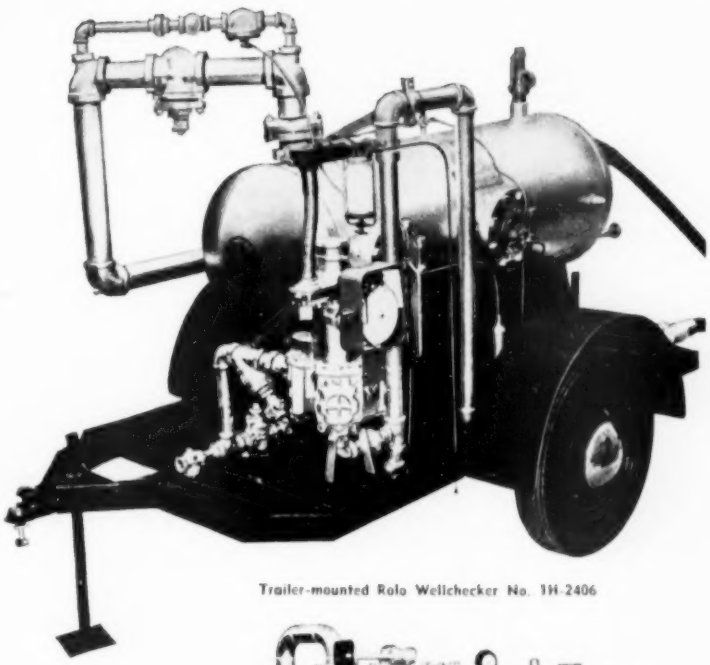
YOU CAN COUNT ON A ROLO WELLCHECKER

to tell YOU what YOU want to know about your producing wells...

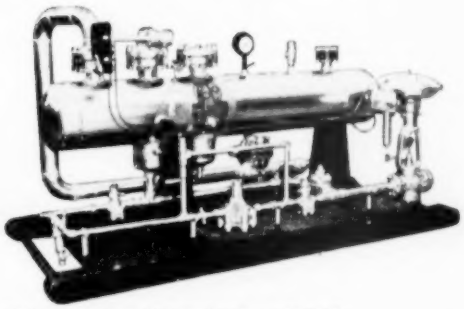
The Rolo Wellchecker, a separator for metering oil and gas, was designed, engineered, and pioneered in the field by Rolo to tell you what you want to know about your producing wells.

The Rolo Wellchecker separates your well fluid into three phases of oil, gas and water, and meters each accurately. This enables operators to check well production daily, and secure accurate production records for tax and royalty purposes.

Made in various sizes and working pressures to fit any operation, Rolo Wellcheckers are used for making drill stem tests, potential tests, periodic production tests, gas-oil ratio tests, marginal tests, etc.



Trailer-mounted Rolo Wellchecker No. 1H-2406



Skid-mounted Rolo Wellchecker No. 4-6H-1607

PERMANENT AND PORTABLE SEPARATORS FOR METERING OIL AND GAS

Typical of the many Rolo units now in use throughout the industry, both portable and permanent Wellchecker units are shown at right. They are shipped completely piped, ready to operate. In addition to oil meter, b. s. & w. sampler, gas run, orifice meter, fittings and all controls, free water knockout with meter can be furnished to separate and continuously remove free water from well fluid.

Send now for your copy of Rolo's illustrated Catalog W-52, with complete descriptions of all Wellchecker units, made ONLY by Rolo. Write us also about your well testing and oil metering requirements, and let us work with you on your problems.

SEND NOW FOR

CRUDE OIL METERING SPECIALISTS

P. O. Box 6763, Houston 5, Texas

BRANCHES: Corpus Christi, Midland, Kilgore, Tulsa, New Orleans, Los Angeles, Bakersfield, Casper, Calgary, (Alta.) Petroleum Industry Consultants, Apartado 3992, Caracas, Venezuela

EXPORT OFFICE: R. S. Stokvis & Sons, Inc., 17 Battery Place, New York, N. Y.

Harrisburg mud-pump piston.

this firm is its Muderator which mixes drilling mud entirely by vacuum, created by passage of mud from the circulating pump. It can be installed on any rotary drilling rig by running a 2-in. bypass line from the circulation pump and connecting it to a 2-in. wing union and the mixer. A 4-in. exhaust line is then run from the Muderator to the slush pit so it discharges into the pit near the pump suction.

Other products displayed are Super-Diamond-Hard pump liners for slush-pump service and a low-pressure alarm designed to give positive warning when lube-oil pressure fails. The alarm fits any make or type of engine and gives warning on failure of the lubricating-oil pressure. In addition, Harrisburg is showing its new piston and replaceable, cup-type rubbers. The piston bodies are of forged alloy steel. The replaceable piston rubbers are of rubber, reinforced by a carbon-steel plate and supported by hardened steel pins.

Harrisburg Sales & Service, Inc., is also showing the new Diamond Hard pump rod in its line of slush-pump specialty parts. The alloy steel rod is ground to precision tolerances.

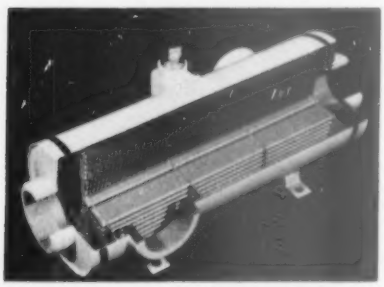
Another Harrisburg item displayed is a hydraulic piston puller which requires no chains, blocks, or stands, and no adjustments are needed. The unit is designed to remove a piston without damage to either the piston or piston rod.

Harrison Radiator Division, General Motors Corp.

Lockport, N. Y.

Block 10

The exhibit of Harrison Radiator Division, General Motors Corp., is comprised of heat exchangers used in industrial applications.



Harrison Radiator Division's heat-exchanger for lube oil and engine-jacket water cooling.

Cutaway units are on display to show the construction of the liquid-to-liquid heat exchangers used with lubricating oil and with fresh-water engine-jacket-cooling systems of diesel and gasoline engines.

The heat exchangers on display are designed to meet the petroleum industry's heat-transfer requirements of gas and diesel engines for boats, trucks and earth moving equipment, stationary diesels, gas and turbine power plants, and hydraulic equipment.

Harris Upham & Co.

Tulsa, Okla.

7 Texas Building

Along with a display of its various services to the petroleum industry, Harris Upham & Co. is posting daily closing quotations on oil stocks.

D. M. Hawkins

Tulsa, Okla.

83N North Area

In attendance

DON HAWKINS

Gravely tractor units are shown at this exhibit. In addition to powering mowers, these units may be utilized for driving chain saws for clearing timber, light bulldozing jobs, pushing trailers, and for a variety of other chores.

Herb J. Hawthorne, Inc.

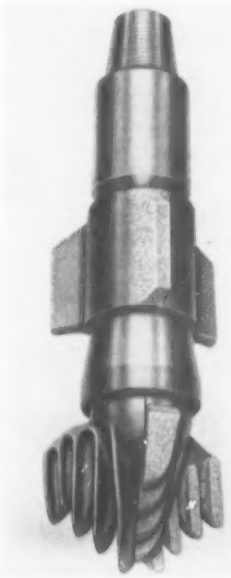
Houston, Tex.

27N North Area

In attendance

EARL M. WEAVER, BOB MEISENBACH, SIDNEY SHERWOOD, ELWOOD CONNER.

Hawthorne "Blue Demon" Rock Cutter bits are featured at this exhibit. Designed with replaceable blade bits the tool is applicable to all-purpose use in all formations and on all drills. Four bit assemblies carry a complete range of bit blade sizes from 1⅞-in. up through 11-in., with blades interchangeable in any fractional size within the range of each assembly.



Hawthorne, "SH" "Blue Demon" bit assembly.

Haynes Stellite Co.

New York, N. Y.

213-214 and 237-238 Oklahoma Building

(Exhibited by Union Carbide & Carbon Corp.)

Hazard Wire Rope Division, American Chain & Cable Co., Inc.

Wilkes-Barre, Pa.

29-30 Silver Lane

In attendance

E. H. TODD, H. S. FRADY, J. R. McCREA, R. C. POWER, A. C. MOTL, B. N. BURNS, J. M. GREADY.

This firm is displaying its various wire-rope products for oil-field uses. Featured is Hazard's Lay-Set preformed wire rope.

Helicoid Gage Division, American Chain & Cable Co., Inc.

Bridgeport, Conn.

176 Oklahoma Building

In attendance

V. E. LYSAGHT, E. H. GRAUL, J. H. MORRISON, H. B. DAVIES.

Displayed at this exhibit are the various gages manufactured by the firm. In the group are pressure and vacuum gages for application in all branches of the petroleum industry.

Hemco Manufacturing, Inc.

Argonia, Kans.

Block 122

In attendance

K. B. WULF, THORNTON E. WULF

Featured at this exhibit is the Hemco-Motive, a mobile car puller for moving tank cars

Hemco-Motive car puller for tank and other rail cars.

and other types of rail cars. This unusual device can push or pull a string of cars and will pass over switches or crossovers and requires no more width than a rail car. It can be moved from one track to another under its own power.

Hercules Motors Corp.

Canton, Ohio

Block 206E

In attendance

JOHN C. KEPLINGER, GEORGE W. LASALLE, J. A. EMBRY, FRANK CHILES, A. G. FORBES, J. L. KENNEDY, W. L. KEPLINGER, C. J. McCULLOCH, R. E. DAVIS, P. V. KUEPFER.

Gasoline and diesel-engine-power units, representative of 69 models in the Hercules line, are being exhibited. A cutaway showing the internal mechanism and Hercules combustion chamber is of particular interest. This sectionalized unit is Hercules' model DIX6-D diesel.

A relatively new power unit in oil-field application, Hercules' model DNXV8, is in operation at the outdoor display. The unit is rated 400 hp. at 2,100 r.p.m. This V-8 power

KLEINS

FIRST with the man in the field!

Ask him—he'll tell you Klein tools and equipment just can't be beat for service—for safety. Look for the familiar Klein trade-mark on pliers and climbers, safety straps and belts, lag wrenches and grips. It has been a trade-mark of quality . . . "Since 1857."

ASK YOUR SUPPLIER

Foreign Distributor: International Standard Electric Corp., New York

Write for your free copy of the Klein Pocket Tool Guide today!

"Since 1857"

Mathias KLEIN & Sons

Established 1857 — Chicago, Ill., U.S.A.

1200 BELMONT AVE., CHICAGO 18, ILL.

"It's oil, sir--LANE-WELLS on the job"

EVER-TITE Quick Couplings

The Best Quick Couplings

Speed deliveries—prevent leakage—save spillage—by using EVER-TITE Couplings. They give a *quick, sealed* connection that stays tight. And their durable bronze construction gives years of dependable service.

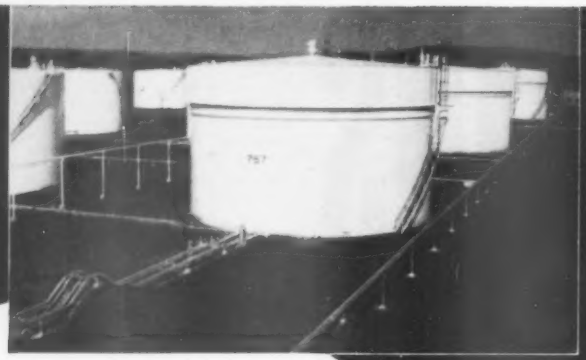
There's an EVER-TITE for every need—with EVER-TITE *quality* throughout. Ask your distributor now.

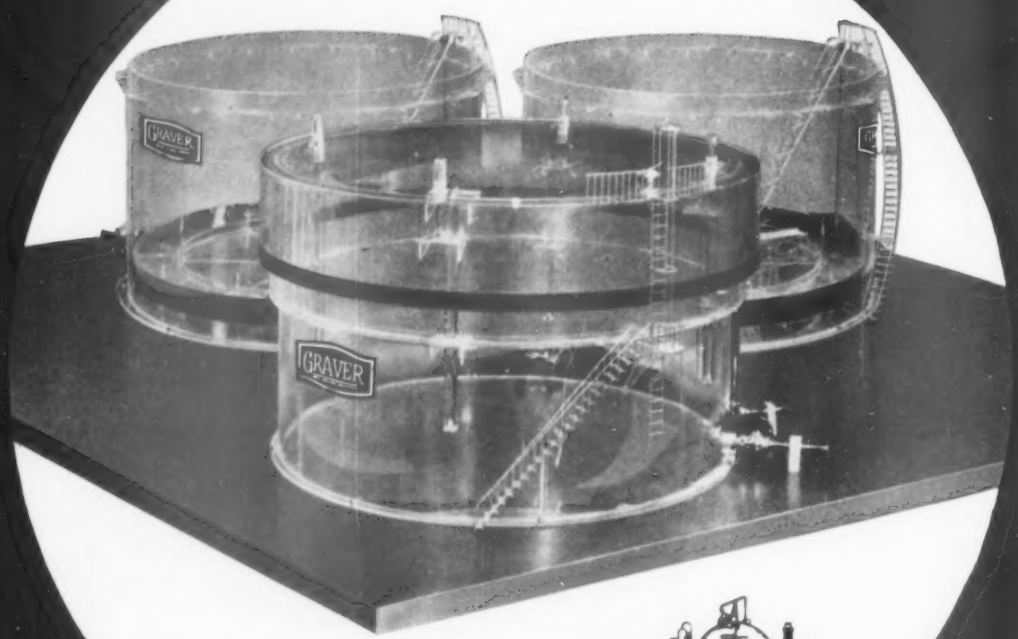
EVER-TITE COUPLING CO. INC.
254 West 54th St., New York 19, N. Y.

See the EVER-TITE exhibit Booth 10 California Building

International Petroleum Exposition, Tulsa, Oklahoma, May 14-23

CONSERVATION
DEMONSTRATED!





INTERNATIONAL PETROLEUM EXPOSITION
TULSA MAY 14-23

GRAVER

You are cordially invited to

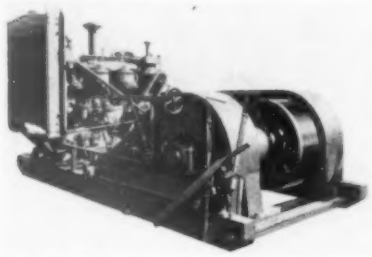
view the Graver Expansion Roof Tank and the Graver Floating Roof Tanks as seen In Scale Working Models hand-crafted in plastic.

These highly visual models demonstrate dramatically the vapor-saving and gasoline-saving potentialities inherent in these patented designs.

Graver Floating Roof Tanks are equally suitable —and widely used-for the storage of crudes. The roof, floating directly upon the crude, allows no air pockets, thus minimizing corrosion.

GRAVER TANK & MFG. CO., INC.
EAST CHICAGO, INDIANA
NEW YORK • CHICAGO • PHILADELPHIA • ATLANTA
DETROIT • CLEVELAND • PITTSBURGH • HOUSTON
CATASAUQUA, PA. • SAND SPRINGS, OKLA. • CASPER, WYO.

plant, although comparatively new to service in the oil field, has been proved in many phases of industry.



Typical oil-field application of Hercules' diesel-power unit.

Henderson Welding Works, Inc.
Houston, Tex.
Blocks R, N
In attendance
R. E. FULLER, J. W. HENDERSON, L. E. HENDERSON

A Henderson Welding Works portable rig with Wilson Manufacturing Co.'s draw works is being displayed at the exhibit of Wilson Manufacturing Co., Inc. The new, jackknife rig has a capacity of 6,500 ft. of 3½-in. or 14,000 ft. of 2⅜-in. tubing.

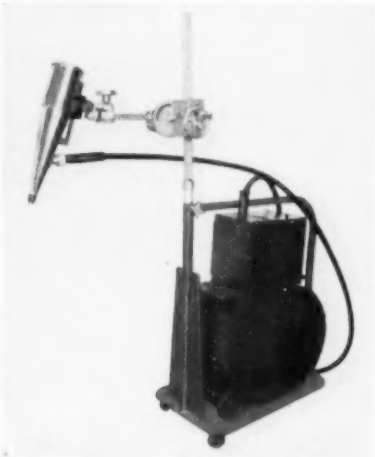
Henderson portable rig.

Hercules Tool Co.
Tulsa, Okla.
7-8-9 California Building
In attendance
P. S. TSCHAPPAT, L. C. RHOADS, VERNON S. WALKER, C. P. CUMMINGS, M. L. CREED, HAROLD R. JARVIS, ARTHUR W. MORTON, W. H. SAGE, JR., H. K. ANDERSON.

Hercules Tool Co., manufacturer of oil-field equipment, is showing a wide variety of its products. Included are two types of polished-rod stuffing boxes, a cross tee and a combination tee, a tubing hanger, casing heads and three different tubing heads along with a neoprene tubing stripper.

Hillco, Inc.
Tulsa, Okla.
63N North Area
In attendance
NED T. STILGENBAUER

This company is exhibiting a complete new line of fixtures for use with submerged arc-welding equipment, along with several other items for general weld shop application. Displayed is a gantry and stand for use with a semi-automatic welding unit. Also shown is a complete line of flux-recovery equipment, including a new high-powered vacuum pickup and a magnetic flux separator.

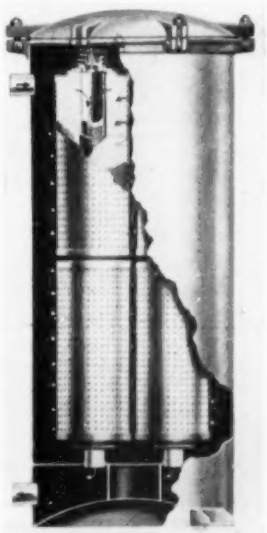


Hillco, Inc., welding gantry and stand.

Hillco is introducing a complete new line of power turning rolls, used in conjunction with either automatic or hand-welding operations on tanks or pipe. These units are equipped with remote variable-speed control and are built in capacity ranges from 2,000 to 150,000 lb. An 18,000-lb. unit is on display. Technicians are on hand to discuss special fixtures often needed in connection with submerged arc-welding operations.

Hilliard Corp.
Elmira, N. Y.
153 Oklahoma Building
In attendance
T. A. LABRECQUE, GEORGE O. ELSTON, KERWIN T. SMITH

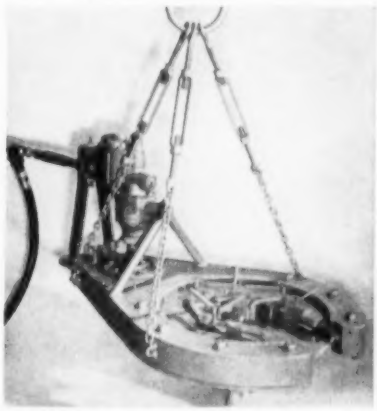
Hilliard is showing its Hyflow oil filters and Hilco oil reclaimers for diesel, gas, and gasoline-engine services.



Hilco's Hyflow oil filter.

I.P.E. EXHIBIT DIRECTORY

Hillman-Kelley
Los Angeles, Calif.
18-19 Silver Lane
In attendance
M. C. BROWN, J. C. KELLEY, JAMES H. KEELEY, H. D. HUSKEY, H. H. COLLINS, R. D. WINANS, M. R. JORDAN, M. D. McLEMORE.



Hillman-Kelley power casing tong.

This exhibit features the Hillman-Kelley power casing tong. This tool makes up the pipe from initial stabbing to final makeup, and does not require any external source of power in any stage of its operation other than the compressed air which operates it.

The Hillman-Kelley power tong is designed to handle casing in any standard size from 5½-in. through 8⅝-in. o.d. A change in jaw components is all that is required to go from one size to another. Operating power is obtained from an air supply which utilizes a compressor with a rated capacity of 60 cu. ft. per minute at 150 psi. in conjunction with a 15-cu. ft. air receiver.

Hinderliter, Don R., Inc.
Tulsa, Okla.
15 Texas Building

Hinderliter Tool Co. Division, H. K. Porter Co., Inc.
Tulsa, Okla.
Block 5

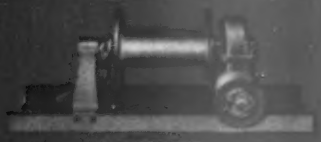
Hinderliter is exhibiting latest models of its well-head equipment with actual cutaways. Products displayed include tubing heads, tubing hangers, blowout preventers, christmas trees, cone catcher, slush-pump-operated junk basket, circulating and releasing overshot, safety bull plug, wedge-type wrist pin.

One of the company's newest products on display is a slip-suspension-type, full-opening casing head designed to support a total maximum casing weight of 150,000 lb. Removable drilling flanges permit attachment of standard blowout preventers and Siamese adapters developed by Hinderliter allow connection to tubing head. Packing for the head is unitized with the Siamese adapter. Other casing heads having 4,000 and 6,000-lb. test ratings are also shown.

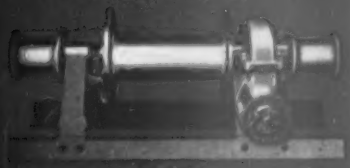
Displayed also is Hinderliter's Four-In-One tubing head designed to permit lowering or removing well tubing under pressure without loss of well pressure or fluid.

Hinderliter's Two-In-One tubing head, having a full-opening body of forged-steel construction designed to withstand 4,000-lb. test pressure or 2,000-lb. cold working pressure, is also displayed.

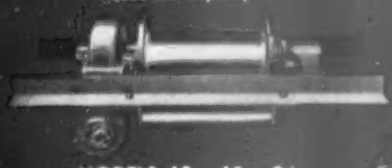
TULSA* WINCHES



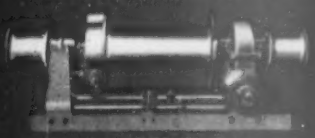
MODEL 10
¼ and 1-ton Trucks
8000 lbs. Capacity



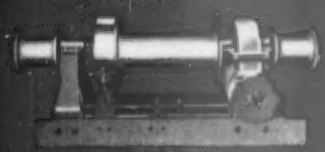
MODEL 19
1½ and 2-ton Trucks
15,000 lbs. Capacity



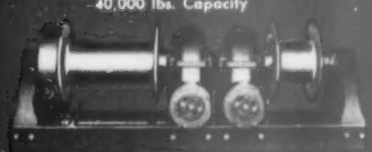
MODELS 12 — 18 — 24
Underslung for ¼ to 3-ton Trucks
8000, 15,000, 30,000 lbs. Capacities



MODEL 34
2 and 3-ton Trucks
30,000 lbs. Capacity

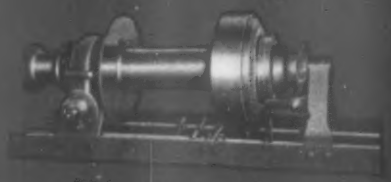


MODEL 64
3 and 4-ton Trucks
40,000 lbs. Capacity

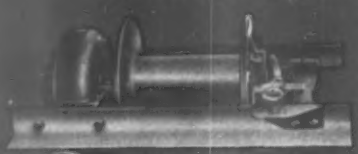


DOUBLE DRUM WINCHES
8000 to 40,000 lbs. Capacities

TULSA TRACTOR WINCHES
For Crawler Tractors
18,000 to 80,000 lbs. Capacities



MODELS 3F10 and 3F23
Friction Clutch Winches
7000 and 18,000 lbs. Capacities

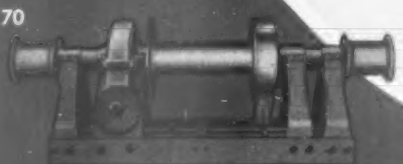


MODELS 12-G and 18-G
For Front mounting on Trucks
6500 and 15,000 lbs. Capacities

MODEL 12-CH
For Dodge Powerwagons
6500 lbs. Capacity

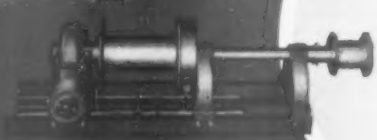
MODELS 21 and 23
1½ and 2-ton Trucks
15,000 and 18,000 lbs. Capacities

MODELS 65 and 70
3 and 4-ton — 4-ton and larger Trucks
40,000 and 60,000 lbs. Capacities

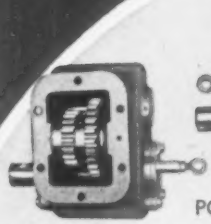


SPEED REDUCERS
15 Models available in a variety of capacities

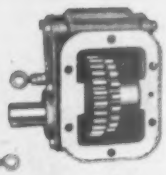
MODEL 80
6-ton Trucks and larger
80,000 lbs. Capacity



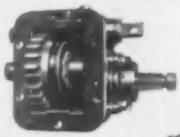
PUBLIC UTILITY
Extended drum shaft
8000 to 30,000 lbs. Capacities



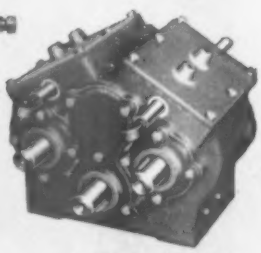
POWER TAKE-OFF
2 forward, 1 reverse speed



POWER TAKE-OFF
1 forward, 1 reverse speed

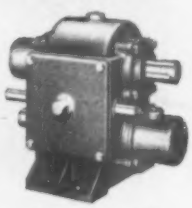


POWER TAKE-OFF
1 speed, heavy duty



POWER DIVIDER
Independent Powering of 2 units from 1 power source

DOUBLE END HANGER BEARING
Dual extended shaft mounted on taper roller bearings



TWO SPEED HANGER BEARING
2 output speeds for 1 input speed

Tulsa* Winch
TULSA, OKLAHOMA
DIVISION OF VICKERS Inc.

Capacity — Refers to Safe Working Ratings

*Reg. U. S. Pat. Off.

TRUCKS and CRAWLER TRACTORS *Every Industry Need*

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W. V. Morgan Company, Sacramento
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Standard Auto Body Co., Inc., Los Angeles

COLORADO
The Winter Weiss Company, Denver

CONNECTICUT
Curran-Waring Equipment Co., Norwalk
Truck Equipment Company, Inc., Norwalk
Truck Industries, Inc., Greenwich

DISTRICT OF COLUMBIA
Watson Automotive Equipment Co., Washington, D. C.

FLORIDA
Miller Truck Equipment Company, Miami
Rivers Body Factory, Jacksonville
Rivers Body Factory, Orlando
Rivers Body Factory, Tampa
West Florida Equipment Co., Marianna

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Truck Equipment Company of Atlanta, Atlanta

IDAHO
The Lang Company, Inc., Boise

ILLINOIS
Auto Truck Equipment Sales, Chicago
Drake Scruggs Equipment Co., Springfield
Bill Montgomery Body & Trailer Mfg., Salem
Nix Brothers, Olney
Scruggs-Drake Equipment Co., Decatur
Voltz Brothers, Inc., Chicago

INDIANA
Ernest Truck Equipment, Inc., Fort Wayne
Southside Equipment Company, Indianapolis
Truck Engineering Co., Fort Wayne

IOWA
F. Colin & Sons, Inc., Cedar Rapids
Pecaut Industrial Supply Company, Sioux City
Weston Dump Body Company, Des Moines

KANSAS
Truck Parts and Equipment, Inc., Wichita

KENTUCKY
Oscar Grady Co., Inc., Louisville
Wilson Machinery & Supply Co., Lexington

LOUISIANA
Dealers Truck Equipment Company, Shreveport
Massart Tire and Supply, Lafayette
Massart Tire and Supply, Lake Charles

MARYLAND
Watson Automotive Equipment Company, Baltimore

MICHIGAN
Ashton Power Wrecker Equipment Co., Inc., Detroit
L. H. Gingrich and Sons, Inc., Grand Rapids
†Herthornway Export Corporation, Detroit
Swift All-Steel Body Co., Inc., Saginaw

MINNESOTA
Smith-Dunn, Inc., Duluth
Smith-Dunn Company, Inc., Minneapolis

MISSISSIPPI
A. P. Lindsey, Distributor, Inc., Jackson

MISSOURI
The Ashton-Richards Company, Inc., Kansas City
The Ashton-Richards Company, Inc., St. Louis
Bailey Auto Body Company, St. Louis
Pitman Mfg. Co., Kansas City
Rothschild's Iron and Metal Works, Joplin

MONTANA
Smith Equipment Company, Great Falls

NEBRASKA
Badger Body Manufacturing Co., Omaha
Highway Equipment and Supply Co., Lincoln

NEW JERSEY
Adam Black & Sons, Inc., Jersey City
Transportation Equipment Co., Inc., Newark

NEW MEXICO
M & F Equipment Company, Albuquerque
Watson Truck and Supply, Hobbs

NEW YORK
Binghamton Heil Equipment Corp., Vestal
Franklin Body & Equipment Corporation, Brooklyn
Maday Body and Equipment Corp., Buffalo
Maday Body and Equipment Corp., Rochester
Syracuse Auto Parts, Inc., Syracuse

NORTH CAROLINA
Ferree Motor & Equipment Co., Greensboro
Mitchell Distributing Company, Inc., Raleigh
Mitchell Distributing Company, Inc., Spruce Pine
Twin-States Equipment Company, Charlotte
Twin-States Equipment Company, Raleigh

NORTH DAKOTA
Smith, Incorporated, Fargo

OHIO
The Carnegie Body Company, Cleveland
The Buckeye Supply Co., Wooster
The Buckeye Supply Co., Zanesville
Kencar Equipment Company, Dayton
Middlekauff, Inc., Toledo
Ohio Truck & Parts Company, Cincinnati
Universal Sales Co., Portsmouth
Weaver Trailer & Body Co., Columbus

OKLAHOMA
American Body and Trailer, Inc., Oklahoma City
American Body and Trailer, Inc., Tulsa
Duncan Equipment Company, Duncan
Leland Equipment Company, Oklahoma City
Leland Equipment Company, Tulsa
Seminole Motor Sales, Seminole

OREGON
Western Equipment Company, Eugene
Western Equipment Company, Portland
Western Equipment Company, Roseburg

PENNSYLVANIA
Doerr Brothers, Inc., Pittsburgh
Eastern Body Company, Philadelphia
Tracken Mfg. & Sales Company, Hummel's Wharf

SOUTH DAKOTA
Pecaut Equipment Company, Sioux Falls

TENNESSEE
Furlow-Cate, Inc., Chattanooga
Martin Machinery & Supply Company, Knoxville
Martin Machinery & Supply Company, Nashville
Rogers Manufacturing Co., Inc., Nashville
Scruggs Equipment Company, Memphis

TEXAS
Adams Truck Company, Inc., San Antonio
American Body and Trailer, Inc., Amarillo
City Welding Shop, Borger
Downs & Clark Equipment Co., Odessa
Downs-Clark, Inc., Lubbock
Alex Feigelson Company, Beaumont
Hobbs Trailer Sales Company, El Paso
Leland Equipment Company, Longview
Oilfield Truck Equipment Co., Dallas
Oilfield Truck Equipment Co., Ft. Worth
Oilfield Truck Equipment Co., Houston
Truckers Equipment, Inc., Corpus Christi
Truckers Equipment, Inc., Harlingen
Wichita Engineering Company, Wichita Falls

UTAH
The Long Company, Inc., Salt Lake City

VIRGINIA
Cole-Kelly Equipment Corp., Richmond
Cole-Kelly Equipment Corp., Roanoke
Transit Trailer Company, Portsmouth

WASHINGTON
Andrews Equipment Service of Washington, Inc., Spokane
Coley Trailer & Equipment Company, Seattle

WEST VIRGINIA
West Virginia Tractor & Equipment Co., Charleston
West Virginia Tractor & Equipment Co., Clarksburg

WISCONSIN
Mullins Body, Inc., Milwaukee

WYOMING
Gehring Equipment Company, Casper

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AFRICA
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BRITISH WEST INDIES
Neal & Massey Engineering Company, Ltd., Trinidad

CANADA
Coutts Machinery Company, Ltd., Edmonton, Alberta, Canada
Coutts Machinery Company, Ltd., Calgary, Alberta, Canada
Truck Parts & Equipment Co., Ltd., Vancouver, B. C.
Willock Truck Equipment Co., Ltd., Vancouver, B. C.
Phil Wood Industries Limited, Windsor, Ontario

COLUMBIA
General Americano de Distribucion, Bogota

CUBA
Cia. Agro-Mecanica Industrial Cangilon S. A., Havana

HAWAII
A. F. Stubenberg Limited, Honolulu, T. H.

MEXICO
Auto Servicio, S. A., Mexico, D. F.

NEW ZEALAND
Motor Specialties Limited, Auckland, C. I.

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Wako, S. A., Caracas, Venezuela
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TULSA, OKLAHOMA — DIVISION OF VICKERS Inc.

† Export Sales Only.
★ Reg. U. S. Pat. Office

DL-713

THE WORLD'S LARGEST MANUFACTURER OF TRUCK POWER WINCHES

THE HARD WAY....

Typical rock and timber swamp
through which our crews
laid 200 miles of 16″, 12″, 10″ and 6″ gas line
for Algonquin Gas Transmission Company
in Massachusetts, Connecticut
and Rhode Island.

It pays to associate with . . .

ASSOCIATED

PIPE LINE CONTRACTORS, INC.

Earl Allen, President • **J. W. Sharman, Vice President**

P. O. Box 2163 **LI-7561**

HOUSTON, TEXAS

H. & M. Pipe Beveling Machine Co.
Tulsa, Okla.
50-51 California Building

In attendance
HARRY STALLARD, J. D. TURNER, LLOYD LIPPINCOTT.

A full line of H. & M. pipe-beveling machines is displayed at this location. Five sizes of the machine are shown, plus shape-cutting and out-of-round attachments. Machines at this location are not being demonstrated but other exhibitors are demonstrating the cutter and beveler.

Hobart Brothers Co.
Troy, Ohio
Block 115

In attendance
R. C. BERCAW, E. K. BUTTERFIELD, R. L. SHERWOOD, CLYDE P. WHITMIRE.

A feature of this display is an 8-ft.-square welding-demonstration booth. Hobart's new 250-amp. d.c. "Pipeliner" gas-drive welder, along with a new, air-cooled, 200-amp. d.c. gas-drive unit, and Hobart's pipe-welding electrode are on demonstration.

Other models, including diesel-engine-driven units, electric-motor-driven units, and gasoline-engine-driven units in various ampere capacities, are also being demonstrated.

Hoil Engineering Corp.
Tulsa, Okla.
Block 107

This exhibit consists of the company's latest type equipment designed for water-flood operations along with portable production-test units designed to meter both oil and water separately.

In addition to crude-oil emulsion treaters and test units, Hoil is also showing its Gas-Gard in full operation as a safety shutoff unit. Also displayed is Hoil's "Gage-It," a device for gaging storage tanks, which does away with thiefing.

Charles N. Hough Manufacturing Co.
Franklin, Pa.
123-124 Texas Building

In attendance
CHARLES N. HOUGH, BERT B. WERTMAN, LOREN E. REITZ, K. S. CURRY, A. D. DANIEL, H. H. FRANCIS, M. J. LOWE, JR., J. L. MILLER, E. J. RODGERS, A. F. TANKERSLEY, F. S. DEWEL, L. L. REIB.

Theme of exhibit is "Products That Cut Down Your Underground Overhead." Displayed are subsurface oil-well pumps, working barrels, working-barrel valves, specialized plungers plus balls and seats for each operating condition. In addition, polished-rod liners, sucker-rod couplings, and various other oil-well specialties are shown.

Houston Oil Field Material Co., Inc.
Houston, Tex.
Block 103

In attendance
T. C. SMITH, JACK CHADDERDON, GEORGE E. MATTER, LEON SINGLETON, R. E. DUKE, A. L. BURNS, JR., FRED LYDIC, W. P. WESTMORELAND, A. B. FOREMAN, JR., LARRY SANFORD, LINN GALEENER, JACK BENDER, BRUCE CORDARY, FRANK SINGLETARY, R. G. CHADDERDON, C. J. ERWIN, C. M. STANDRIDGE, LOU ARMSTRONG, TOM HOLLAND, WELDON MEDDERS, BRANCH McNEELY, CECIL PURYEAR, D. V. SKINNER, H. H. HUGHES, C. H. POLLARD, R. D. DILWORTH, DALE OWEN.

Homco's exhibit includes a variety of its products. Items displayed are:

Nitrogen impact jar, actuated to show intense blow created.

Hydraulic pulling tool, pulling pup joints.

Combination jar and key-seat reamer; wash-over backoff tool; electronic free-point indicator, and string shooting.

A traveling mud-laboratory mud and chemical display and a unit filled with working models of cutting and fishing equipment and subsurface surveying tools plus sidewall coring and a high-pressure pumping unit. Comfortable chairs and drinking fountain are provided for convience of visitors and literature is available to those interested.

Huber, J. M. Corp.
Borger, Tex.
55N-56N North Area

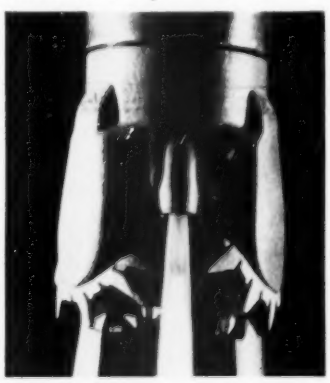
Hughes Tool Co.
Houston, Tex.
Block 106

In attendance
Hughes Tool Co.'s exhibit includes the major types of its Tri-Cone rock bits, jet bits, Type R-1 insert bits, bit breakout plates, the latest types of Flash-Weld and Seal Grip tool joints, and core bits.

Type R-1 Tri-Cone rock bit.

Type R-1 bit, given the name, "Hugheset," makes use of the Tri-Cone design but has no milled teeth. Sintered tungsten carbide and forged alloy steel are combined to produce an abrasion-resistant cutting surface for these bits.

The Hughes Tri-Cone jet bits on display reflect advancements in the jet field. The jet nozzles direct a high-velocity stream on the bottom of the hole to remove the loose cuttings. The flow pattern set up as a result of the design of the nozzles and the force of the jet stream, creates turbulence around the bit cutters to keep them clean.



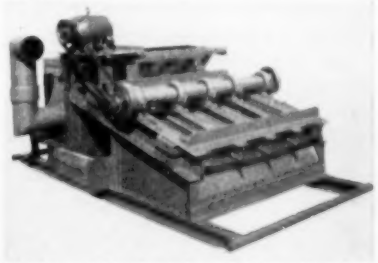
Tri-Cone jet bit.

I.P.E. EXHIBIT DIRECTORY

Hutchison Manufacturing Co.
Houston, Tex.
26-29 Kansas Building

In attendance
F. E. HUTCHISON, ROY LA BERGE, C. R. CURTIS.

Displayed is a Rumba shale shaker plus forge blowers for cable-tool rigs and Flolight rig-lighting equipment.



Hutchison Manufacturing Co.'s Rumba shale shaker.

Hyatt Bearings Division, General Motors Corp.
Harrison, N. J.
Block 10

In attendance
J. R. GILMARTIN, H. R. GIBBONS, H. M. CARROLL, J. M. KELLY, I. L. HILL, F. H. WEBSTER, L. LAURA, J. A. TRAIL, L. S. NAGLE.

Hyatt Bearings Division is displaying various types and sizes of its roller bearings as applied to pumping units, rotaries, blocks, engines, pumps, draw works and other oil-field equipment.

Hyatt's Spherangular bearing.

Hydraulic Pumps, Inc.
Tulsa, Okla.
Northeast Corner, California Building

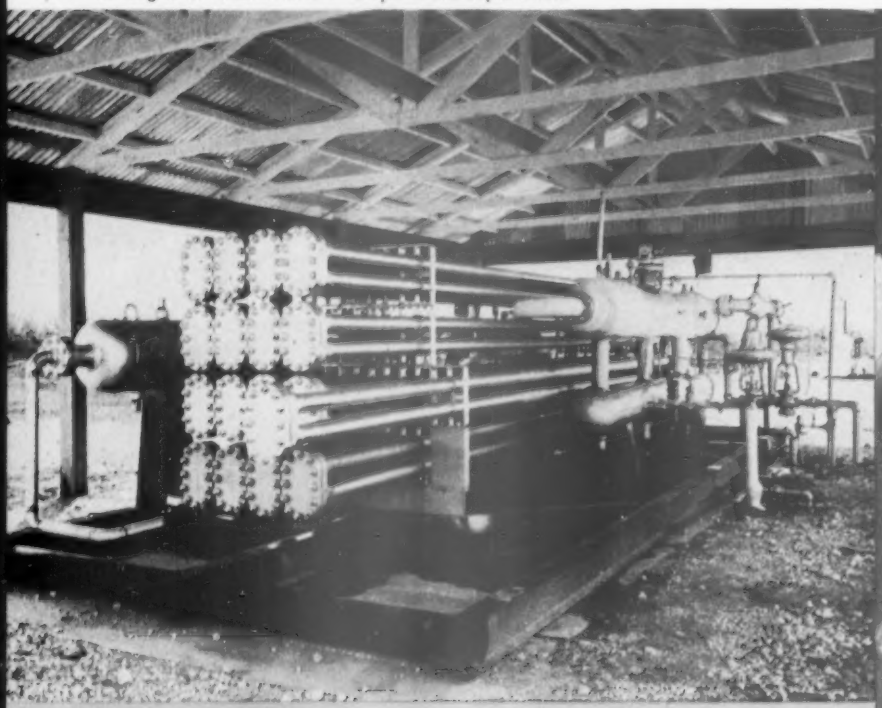
In attendance
H. M. LUNDQUIST, R. L. DAVIDSON, JR., JAMES G. DAVIDSON, R. N. LATTNER, H. P. SANTEE.

This exhibitor is featuring a new type of bottom-hole, double-acting, hydraulic pump. The unit is so devised that a standard A.P.I. plunger operates as a double-acting fluid motor, in a standard working barrel. Flow of power fluid to either end of the fluid-motor piston is controlled by a pilot valve. Rating of the unit on display is approximately 200 bbl. per day at 6,500 ft. Its prime mover is a 10-hp. electric motor.

Hydril Co.
Los Angeles, Calif
Block F

Hydril is showing its pulsation dampener for handling the problem of surging and water

Send the temperature down . . . and you send recovery up. Inject glycol into the wellstream ahead of the choke and you get even lower temperature without hydrates forming. Installations like this BS&B Glycol Injection System with Stabilizer are setting new records in low temperature separation.



The use of glycol permits more efficient use of the regenerative heat exchanger . . . cooling the gas to temperatures well below the hydrate point. This gears the separator to maximum recovery of valuable hydrocarbons.

The Stabilizer is that all-important piece of equipment that permits you to get that increased recovery to the stock tank and keep it there. Essentially it means there are no vapor losses at atmospheric temperature and stock tank pressure. Desirable and profitable hydrocarbons are no longer led astray by light, wild gases.

BS&B Glycol Injection System of LOW TEMPERATURE SEPARATION with Stabilizer*

REALIZE greater recovery
STABILIZE to prevent stock tank losses
SAVE products formerly wasted
PUT money in the bank

See Our Exhibit
OIL SHOW
TULSA MAY 14-23

You're after increased recovery in your stock tanks.

You can get it with the BS&B Glycol Injection System of Low Temperature Separation with Stabilizer. Too, you save products formerly wasted. It eventually amounts to more money in the bank. Operators using this equipment and who have maintained comparative tests are getting from 20% to 50% or more increased recovery over standard 2-stage operation.

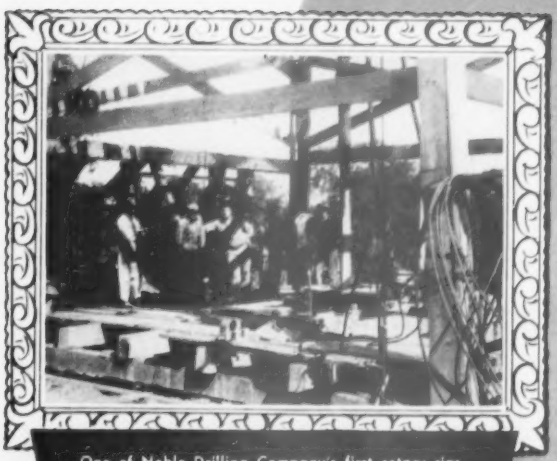
Let us show you some specific test figures. See how they apply to your problems.

BLACK, SIVALLS & BRYSON, INC.

Oil & Gas Equipment Division, Department 1-A5A
2131 Westwood Blvd. Oklahoma City, Oklahoma

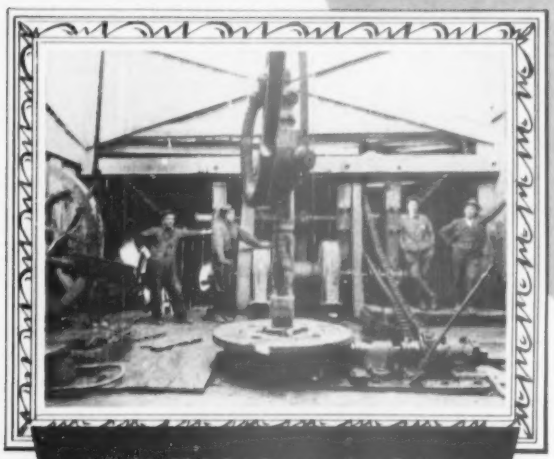
EFFICIENCY
BS&B
RELIABILITY
OUR 60TH YEAR

* Patented and Patents Pending

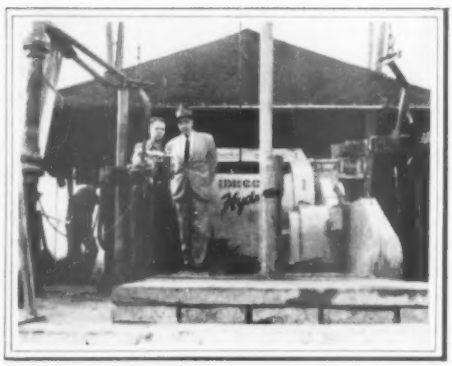


One of Noble Drilling Company's first rotary rigs, near Healdton, Oklahoma. Old Timers pictured are, left to right, Claud Martin, fireman — Arthur Simpson, driller — Earl Deacon, tool pusher — Jim McGee, floorman — George Kemnitz, derrickman and "Sunshine" Stewart, floorman.

OLD TIMERS



A Sinclair Oil & Gas Company rig at Covington, Oklahoma. Old Timers pictured are Ross Reed, driller — Gary Goldsmith, driller — Vern Brown, rotary superintendent and O. E. Dougherty, general superintendent.



H-35-S IDECO Hydrair Torque Converter Rig recently delivered to H & M Development Corporation. Pictured are J. R. Crain and W. H. Martgan.

The two interesting old photographs reproduced on this page illustrate rotary rigs that were typical of those sold and serviced by Lucey Products Corporation in the early Twenties.

Typical of our present-day facilities and service is the ulta-modern Ideco Torque Converter Rotary Rig also illustrated.

As old timers in the supply business, we understand the industry's equipment and service needs and our inherent flexibility often results in agreeable purchase plans and unusual services.

PRODUCTS LUCEY CORPORATION

LUCEY PRODUCTS CORPORATION

OIL WELL SUPPLIES

TULSA, OKLAHOMA

hammer in rotary hose and mud lines. It is designed to replace the standard air chamber on any slush pump. The dampener is self-cleaning and requires little attention.

Hydril is also showing its blowout preventer, with models demonstrating its operation. In addition, automatic pump accumulators for operating blowout-prevention equipment; Two-Step thread on casing, tubing, and drill pipe; and the Hydril system of pressure-weld are displayed.

Hyster Co.
Peoria, Ill.
Block C
(See Caterpillar Tractor Co.)

Hyster Co.
Portland, Ore.
Block 9

The Hyster exhibit, manned by representatives from C. H. Collier Co., Inc., of Dallas and Houston, and Machinery & Supplies Co., of Kansas City, Mo., are demonstrating material handling equipment such as the Karry Krane, Turret Truck and various models of fork-lift trucks. Hyster's "Courtesy Crane" is serving in miscellaneous jobs around the exposition grounds.

Hyster's tractor division, which builds winches and other tractor attachments for Caterpillar equipment, is represented in Caterpillar Tractor Co. exhibit.

Hyster Karry Krane, a 10,000-ft. capacity mobile industrial unit.

Ideco Division
Dresser Equipment Co.
Dallas, Tex.
Block 11

Ideco is featuring eight different items. Prominently displayed is the Ideco-Waukesha Twin Compound, designed to meet demands for a torque-converter-equipped, gas-butane engine in the 300-hp. class.

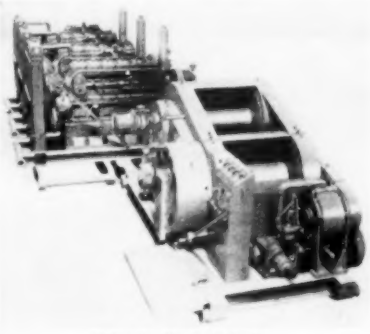
Also displayed is the Ideco H-35 Hydrair hoist, a 350-hp. rig. Its principal equipment includes air clutches on high and low-speed drives to main drum; torque-converter drive; oil bath for all chain drives; large brakes; Hydromatic brake engaged by direct air clutch; catshaft disconnect clutch; chain or propeller shaft drive to rotary table; fingertip air cntrols; and pressure lubrication of all shaft bearings. The H-35 is rated for drilling to 5,000 ft. with 4½-in. drill pipe, and for workover and servicing to 13,500 ft.

Another featured item is the Ideco H-750 Hydrair hoist for drilling to 8,000 ft. with 4½-in. drill pipe when powered by two or three engines developing a total of 750 hp. Shafts are of alloy steel and operate in self-aligning roller bearings. Airflex clutches serve as flexible couplings and act as engine disconnects. The compound drive is enclosed in an oiltight case. The pump drive is connected to the compound through an air clutch controlled from the driller's position.

The largest torque-converter equipped drilling rig in the world is yet another feature at Ideco's exhibit. The giant rig incorporates a console control panel with fingertip air controls that will put over 1,785 hp. to work. The rig is to be exported to France for use in oil fields near Pau. Manufactured entirely in Ideco's Beaumont plant, the rig consists of draw works, transmission, two dual-engine compounds, and an unusual catworks.

Ideco's 200-ton Shorty block.

Still another Ideco feature is its full-view mast, an A-frame structure held in the upright position by a pair of auxiliary legs which serve also as a part of the raising mechanism. No guys are required and no braces or girts obstruct the driller's view of the traveling block or derrick man. Widespread legs permit use of any type or size drilling rig and provide clear space around cathead. Raised by means of traveling block, the mast is pushed to drilling position by a pair of raising legs, pivoted at ground level. Automatic safety locks are engaged by roller shafts as the mast approaches vertical holding it in an upright position.



Ideco's Hydrair hoist.

I.P.E. EXHIBIT DIRECTORY

The Type "C" Kwik-Lift Mast, used in conjunction with the Ideco Rambler rig, for servicing, workover, and shallow drilling, is also featured. When mounted on a truck or trailer with draw works and engine, the rig will meet most road-weight restrictions.

Featured along with the other equipment is a 200-ton-capacity block which has been added to Ideco's regular line of Shorty blocks for drilling and servicing masts. These unitized assemblies combine the block, spring-loaded link adapter, and swivel bail hook into a short, compact assembly. The 200-ton block has a hydraulic cushion return that eliminates snap and jar of the hook.

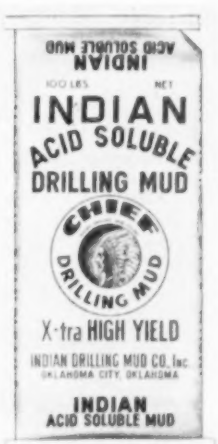
The new Ideco Hydrair 7-11 rig designed for a range of horsepowers from 700 to 1,100 is the eighth featured item at this exhibit. Fully portable, the 7-11 can be rigged down into 8 ft. maximum road-width loads.

Independent Eastern Torpedo Co.
Breckenridge, Tex.
Block L

Independent Petroleum Association of America
Tulsa, Okla.
41 Oklahoma Building

Indian Drilling Mud Co.
Oklahoma City, Okla.
36 Kansas Building
In attendance
R. M. ROSS, EUGENE TERRACE, R. C. NEWMAN, MELVIN WILLIAMS, ROY SCHOENECKE, HARRY PRUNER, J. R. McGREW, C. R. HARGROVE, ED SCIPIONE, DON BURNELL, A. D. MARCH, E. L. MARCH, J. T. AMOS, W. E. MORSE.

Indian is featuring its new acid-soluble mud. In addition, the company is displaying other items in its line. Technicians are available at the exhibit for discussing application of Indian's products.



Indian Drilling Mud Co.'s new acid-soluble mud.

Industrial Equipment Co.
Tulsa, Okla.
30-31-32-33 Park Lane

Industrial Products Division
Westinghouse Air Brake Co.
Wilmerding, Pa.
14 Texas Building
In attendance
A. J. BENT, R. R. STEVENS, D. S. PERMAR, A. J. GROTH, R. F. HANLEY, E. J.

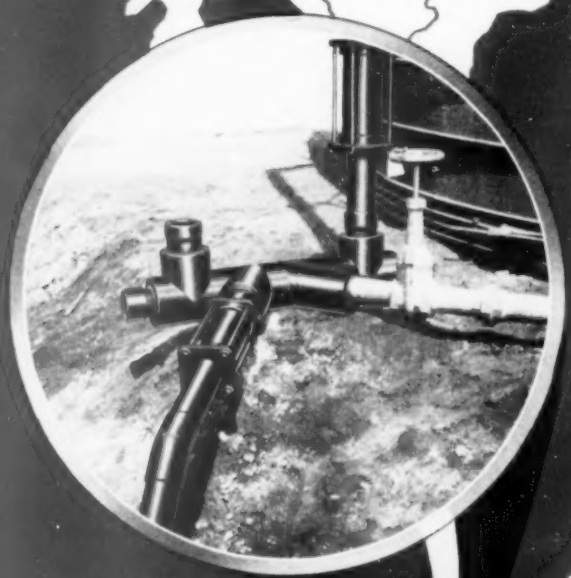
PREVENTS

GATHERING LINES

NEW CARLON L AND CARLON B NOW

EASY TO STRING • EASY TO CONNECT • EASY TO MAKE-UP

CORROSION AND PARA[illegible]IN TROUBLES



Carlon Plastic pipe is guaranteed forever against rot, rust, and electrolyte corrosion. Its smooth mirror finished interior prevents head loss because it resists paraffin build up, and will not accumulate scale or sediment. It resists corrosion internally and externally in most soils, gases, and liquids that generally effect steel or other tubing. Carlon Plastic Pipe lasts longer, is light in weight, and easy to make up.

PHYSICAL PROPERTIES OF CARLON L and CARLON B
(The Pipe With the Stripe)

	Carlon L	Carlon B		Carlon L	Carlon B
Yield Tensile 77°F	4400	3300	Flexural Strength P.S.I.	7000	5300
Impact Strength (Izod notched, Ft. Lbs. per Inch 77°F)	8.0	2.2	Heat Distortion (264 P.S.I.)	175°F	145°F
			Resistance to Oils	Good	Good
			Resistance to Acids	Excellent	Good
Specific Gravity	1.05	1.20	Resistance to Alkalis	Excellent	Good
Modulus of Elasticity	300,000	138,000	Coefficient of Expansion per Degree Centigrade	.00003	.00014
Rockwell Hdns.	R-96	R-104			

AVAILABLE AT YOUR SUPPLY STORE!

Standard sizes of Carlon Plastic pipe and fittings are available at your nearest supply store for immediate shipment and fast delivery. Special assemblies or connections are custom made to your specifications for your particular problem.

Carlon Products Corporation offers sales engineering service throughout the oil industry. Contact your local supply store today, or write, wire, or call for sales engineering service or consultation on your particular problem.

SPECIFY "THE PIPE WITH THE STRIPE"

CARLON CP

CARLON PRODUCTS Corporation
10225 MEECH AVENUE • CLEVELAND 5, OHIO
See Your Nearest Supply Store or
GREEN CONTRACTING & ENGINEERING COMPANY
PETROLEUM BUILDING • WICHITA 2, KANSAS

BOEHS, E. E. HEWITT, P. S. TILTON, D. G. COKER, L. P. HARVEY, J. F. GRAHAM, C. L. DEEMER, G. C. FARMER, R. T. SHAFER, E. E. FLYNN, F. S. WHALEY, F. E. BAXTER.

The Industrial Products Division of Westinghouse Air Brake Co., specialists in remote control systems, is featuring two, three, four, and five-position valves and cylinders for finger-tip control in the operation of drilling rigs. Application and sales engineers are on hand to discuss this equipment.

Industrial Pyrometer & Supply Co.
Alton, Ill.
74N North Area

Industrial Sales & Engineering Co.
Houston, Tex.
43-45 and 60-62 Kansas Building

This oil-industry service organization is showing two new products, O-rings and bellows-type polished-rod protective boots.

The O-rings, manufactured by Precision Rubber Products Co., are shown in 49 new sizes and in a large range of compounds.

Chicago Rawhide Manufacturing Co., maker of the new bellows-type polished-rod protective boot, has designed a type which clamps to the top of the stuffing box on one end and around the polished rod just below the rod clamp on the other end. Standard length top, bottom, and intermediate sections permit application to various stroke lengths. The boot is made from an oil-resistant rubber-impregnated cloth and firmly stitched with heavy-duty thread. Boots of the type displayed are also adaptable to pump rods, hydraulic piston rods, and the like.

Industrial X-Ray Engineers
Seattle, Wash.
221 Oklahoma Building

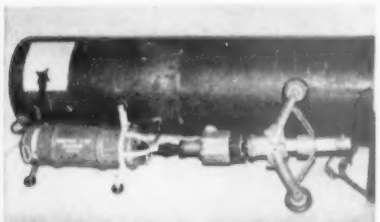
In attendance

HAROLD HOVLAND, MAC BOUCHER, BOB HUGHES, BOYD T. COLLIER, JR.

Industrial X-Ray is showing how its mobile field unit actually crawls through sections of pipe, to X-ray welds on a complete, 60° arc.

In less than 2 minutes, the device takes a picture of a complete circumferential weld in one exposure, disclosing defects as small as 1½ per cent of the pipe's thickness.

In addition, Industrial X-Ray's exhibit features color pictures of its mobile and other weld inspection equipment on the job, in all parts of the world.



Industrial X-Ray Engineers' inspection unit which makes an exograph of a circumferential pipe weld in one exposure.

Ingersoll-Rand Co.
New York, N. Y.
Block U

In attendance

J. J. JANZEN, C. B. BASON, J. G. LUTZ, L. H. GEYER, F. J. WETZEL, W. H. LEE, A. A. HOLLAND, D. J. BURNETT, DREW WHITING, W. GEBO, F. E. WOODLING, R. C. PROCTOR, G. H. BRAHLER.

Displays of compressors, compressor valves, pumps, air starting motors for gas and diesel engines, air and electric tools, paving breakers, and rock drills, applicable to the petroleum industry, make up Ingersoll-Rand's exhibit.

Forty different valves are on display. Six types, for various pressure and special operating conditions, are exploded and other displays show the range of valve sizes. Two pump models for light and medium-duty process services are also shown.

A production pump model of single-stage design and recently introduced by Ingersoll-Rand for general hydraulic services with water or noncorrosive liquids is on display. For medium and high-pressure service, two multistage pumps are shown. These units feature the Unit-Type rotor assembly.

The Ingersoll-Rand centrifugal-pump display also has vertical multistage units and designs produced from special alloys particularly for process service.

Ingersoll-Rand's L.P.G. compressor for transferring liquefied gases such as butane, propane, anhydrous ammonia, and for recovery of residual gases remaining in holding tanks or tank cars after liquid is removed, is shown along with compressors for engine air starting. An air starting motor installed on a diesel engine is being demonstrated. Various engines at other exhibits are equipped with I-R air-starting motors.

Featured among new air tools is a close-quarter Impactool for heavy-duty nut running, a triple-head scaler, and a backfill tamper. Other units are on display from the complete line of I-R labor-aiding air tools. Included are overhead hoists, drills, sump pumps, chipping hammers, diggers, and utility hoists.

The multipurpose electric Impactool is being demonstrated and adequate literature on all I-R products is available.

The display also features heavy-duty and medium-weight breakers for general demolition work with interchangeable front heads for sheeting and spike drivers, plus jackhammers suitable for drilling holes up to 2 in. in diameter and 10 to 15 ft. deep in the hardest rock.

Insley Manufacturing Corp.
Indianapolis, Ind.
Block 9

International Harvester Co.
Chicago, Ill.
Block 101

In attendance

P. V. MOULDER, T. B. HALE, A. J. PETERSON, I. P. PAYNE, W. H. TUDOR, NEAL HIGGINS, L. J. LANGE, H. D. ERTZ, E. A. BRAKER, W. F. HALL, P. L. MOLNAR, J. A. KATHREIN, A. W. MEYERS, D. B. SANFORD, F. W. VAN ALLEN, H. T. REISHUS, W. M. HOLLAND, R. R. McKIEL, D. C. STEELE, E. P. STEINER, R. H. WHITE, F. W. SCHUEDDIG, J. F. MOHATT, A. E. RIXMANN, H. C. BARLOW, H. R. CARLSON, F. R. JOHNSON, F. D. SMITH, T. R. McGUIRE, H. W. PALS, O. C. SWIGGER.

International Harvester Co. is featuring its complete line of equipment for all oil-industry operations. On exhibit is a full line of crawler tractors, carbureted and diesel engines, and trucks designed to fit every oil-field need. Included are loaders, inside and outside dozers, pipebooms, winches, and backfillers. The Hough "Payloader" is prominently shown.

Diesel engines ranging up to 180 net working horsepower and natural-gas carbureted engines for every oil-field power requirement are on exhibit. A compound of two 180-hp. engines is shown as well as electric generators made by Palmer, Onan, and Ready-Power. Included in the power-unit display are several cutaway models showing interior design and construction. Also on exhibit is an International Super A wheel tractor with Wagoner loader.

Six-wheel International truck, rigged for oil-field service.

A complete line of International motor trucks plus oil-field bodies, winches, utility bodies, tractor tilt cabs, welding trucks, trailers, and the "Travelall," will also be displayed.

International Nickel Co., Inc.
New York, N. Y.
64-65 Texas Building

In attendance

B. B. MORTON, CHARLES BROWN, R. J. RICE, GEORGE FISHER, JR., H. S. LEWIS, W. J. SMITH, A. G. ZIMA.

Exhibit consists of a "flow sheet" of the petroleum industry, indicating by appropriate lighting and animation, what equipment parts and at what points in the "process" nickel alloys are commonly used or recommended for improved service.

Interstate Oil Compact Commission
Oklahoma City, Okla.
3 Texas Drive

In attendance

EARL FOSTER, LAWRENCE A. ALLEY

Map exhibit shows original and present states belonging to the I.O.C.C.

Irving Subway Grating Co., Inc.
Long Island City, New York.
56 California Building

In attendance

JAMES E. IRVING, J. C. LYNN, L. F. FONTANA, R. D. BROWN, JOHN SKILLMAN.

This exhibit incorporates an open-steel

An installation of Irving Subway Grating Co.'s radial walkways.

To handle payloads profitably **BUY CUSTOM-BUILT AUTOCARS**

This unit has the distinction of being one of the biggest Autocars at work in the oil fields of Texas. It is a mighty Model DC-20064 Autocar-Diesel 6-wheeler owned by Dale Truck Line, Inc., Houston, Tex.

Autocar will be fully represented at the
TULSA OIL SHOW
Be sure to visit our location near the entrance.

Ask for a free copy of the new Autocar Oil Field Folder

Your Autocar goes through the production line with your ticket on it calling for a certain motor, transmission, rear end—all the components required for efficient handling of your particular payloads under your particular operating conditions. You can't beat that system. It is bound to result in lower cost per ton-mile hauling. Find out how we can custom build an Autocar for *you*. Clip the coupon.

Autocar Trucks

The Autocar Company, Ardmore, Pa.

Established 1897

Autocar Representatives in

DALLAS
OKLAHOMA CITY
EDINBURG
FORT WORTH
EL PASO
ODESSA
SAN ANTONIO

The Autocar Company, Ardmore, Pa.

I want to hear more about hauling more profitably by using Autocars built for the job.

Name _____

Firm Name _____

Address _____

No. of trucks in fleet _____ **19E**

For every

flying engineer service ★ drilling mud products ★ mud research laboratories ★ mobile mud laboratories ★ gunbarrel testing equipment ★ well logging ★ field engineer service
you can rely on Baroid

drilling fluid need

Operators find, in **BAROID DRILLING MUD PRODUCTS**, a complete line of mud-making and mud-treating materials – high-colloidal content clays, organic colloids, salt-resistant mud products, weight material, mud thinners, treating agents and lost circulation additions – all of the high quality for which Baroid has always been noted in every oil field.

VISIT US AT OUR BOOTH IN THE OKLAHOMA BUILDING DURING THE IPE

The skilled **BAROID FIELD SERVICE ENGINEER** is a familiar figure in every active drilling area in the United States. Thoroughly trained in drilling problems and drilling fluids, these experienced mud engineers are on the job 24 hours a day and 7 days a week, if need be, helping operators to make hole faster, more safely, and more economically, through drilling fluid control.

Where wells are hard to reach, **BAROID FLYING MUD ENGINEER SERVICE** quickly brings the services of the mud engineer to even the most inaccessible wells. Rigs in bayous miles from any road, rigs in isolated country – all are reached within minutes, almost, by a unit of the Baroid air fleet of six planes. Three of these are amphibians which can, practically speaking, go anywhere.

Precision-built **BAROID MUD TESTING EQUIPMENT** is used in every major oil area throughout the world. For every test on drilling fluid, Baroid provides equipment to make the test with the greatest accuracy, ease and speed that is possible. Many of these items of mud testing equipment were invented, developed and designed by Baroid; all are made to the highest standards of Baroid quality.

Providing down-hole information while drilling, **BAROID WELL LOGGING SERVICE** gives operators greater control than was ever known before in the drilling of wildcat or semi-wildcat wells. Examination of the mud and cuttings in the return circulation gives quick and accurate formation data while the bit is drilling. Many operators drilling in known fields also use Baroid Well Logging Service because of its speed and accuracy, and because it also provides core analysis on location.

First in the field, **BAROID RESEARCH LABORATORIES** are still the foremost laboratories devoted to research in the field of drilling fluids. In these laboratories, today as for years past, work goes steadily on, searching for new drilling fluid materials, testing materials, developing new fluids and new techniques for the improvement of well control by drilling fluids.

Completely equipped, **BAROID MOBILE MUD LABORATORIES** are literally laboratories on wheels. Designed to meet those exceptional circumstances which demand the accuracy and completeness of full laboratory service, and at the same time allow a minimum of time, Baroid Mobile Mud Laboratories bring the latest in scientific mud-testing procedures right to the well.

you can rely on **Baroid**

BAROID · AQUAGEL · BAROID OIL WELL DRILLING MUD SERVICE

HOUSTON • TULSA • LOS ANGELES

BAROID SALES DIVISION, NATIONAL LEAD COMPANY ★ Main Office: Houston, Texas • P. O. Box 1675, Houston 1, Texas

walkway and stair-treads assembly. Shown in addition are a sample of "Gridsteel" steel-mesh retainer grid for interior surfaces of refractory units to retain castable lining material, along with samples of various designs of open-steel meshes plus other items pertaining to Irving Subway Grating Co.'s products as related to the petrochemical industry.

Iverson Supply Co.
Tulsa, Okla.
88-90 Oklahoma Building

In attendance

S. J. IVERSON, T. D. COLLINS, A. M. IVERSON, A. L. WALLACE, C. C. HURLBURT, L. E. FERGUSON, W. L. REYNOLDS, H. D. LAWVER, GLENN CURRY, J. D. DUDLEY, JAMES H. BEARD, HENRY F. OLIVER, DICK SCHRIBER, R. S. SEARLS, W. J. GEESLIN, HUGO ZIMMER, VERNIS B. HARRIS, R. B. FIELDS, JR., JAMES CARR, JOHN CURTIS, DAVID CRICHTON, JR., GLEN HUNT, EARL ZEIGLER, H. W. BECK, L. E. WINGET, TOM BRYANT, A. M. IVERSON, JR., ERNEST LAMBERT, WAYNE G. WALLACE, KENNETH C. FOLLOWWILL, MARVIN C. NIBLACK, H. B. WILLIAMS, ROBERT T. CHRISTIAN, SR.

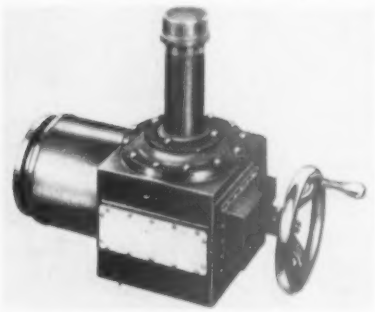
Iverson's exhibit features a section of Goodall, Flexo rotary hose with Barney built-in couplings. This hose is designed to withstand pressures of 5,000 psi. Since most of the oil industry equipment handled by Iverson is being exhibited by the manufacturers themselves, Iverson's exhibit is designed principally to serve as a headquarters and information center.

Janette Electric Manufacturing Co.
Morton Grove, Ill.
8N North Area

In attendance

W. H. SALEE, W. A. WIGHT

This company is exhibiting its new gate-valve drive, linear-valve drive, and rotary-valve drive. Featured is Janette's fully automatic gate-valve drive. This unit is equipped with Tork-type clutch which allows the power drive to be completely disengaged, without buildup of excessive force in overrun.



Janette's gate-valve drive.

Jensen Bros. Manufacturing Co., Inc.
Coffeyville, Kans.
21 Kansas Building

In attendance

W. G. JENSEN, K. R. JENSEN, ELMER JENSEN, W. G. HELLINGHAUSEN, A. V. TURNER, ROY RILEY, C. H. ADAIR, A. G. EVANS, L. G. FENN, OREN ESTEP.

This exhibit includes a small pumping unit operating on a water-pressure system, with its principal equipment being shown by Eustice Equipment Co.

Jensen pumping unit rated at 14,000-lb. polished-rod load.

One Jensen pumping unit is in simulated operation, being driven by a ¼-hp. electric motor. The polished-rod load on this unit is 4,000 lb.

Jet-Lube, Inc.
Los Angeles, Calif.
200 Oklahoma Building

In attendance

JACK BALLAGH, JOE BERGERON, FRANK BERGERON, ROBERT F. DUNN.

A number of new products are featured by Jet-Lube, Inc. In this group of products are an applicator for lubricating tool joints, drill collars, drill tubing, and casing. The equipment consists of a flexible head, swivel-mounted to a handle; a trigger-operated control valve with a high-pressure hose; enclosed container; and pump. Shown along with the lubricator are an all-purpose "no drop," valve lubricant with nonmelting, high-temperature and low friction characteristics which contains a rust preventive. This lubricant is insoluble in hydrocarbon solvents, gas and oil, water, brine, most acids, and most alkaline solutions and is a clear lubricant having similar heat-resisting and anti-solvent features.

Still another Jet-Lube product is shown. This new metallic-base, low-friction thread lubricant is especially designed for drill collars and heavy duty on drill pipe where full makeup and easy nongalling breakout properties are essential. The product is a high-temperature lubricant pumpable at subzero conditions, and is nonsoluble in water or drilling fluids.

Other new Jet-Lube products include a new inexpensive, metallic-base tool-joint and pipe lubricant, compounded for medium service where high torque, temperature, and weight are not factors, plus Kopr-Kote a copper-lead-graphite metallic-base lubricant compounded particularly for use on casing and tubing. Other Jet-Lube products displayed are a nonfluorescent drill-string lubricant. An all-purpose lubricant and applicator plus gear lubricant.

Jet-Lube applicator.

Johns-Manville Sales Corp.
New York, N. Y.
44-47 Oklahoma Building

In attendance

L. A. BALDWIN

How asbestos products serve the oil industry is the main theme of the Johns-Manville exhibit. Materials displayed include insulations for vessels and pipes, asbestos wrappings and plastic tapes for pipe lines, asbestos-cement pipe for salt-water-disposal lines and similar purposes, asbestos packings and gaskets for drilling and production equipment, friction materials for machinery, and asbestos building materials.

The display covers high-temperature insulations for applications up to 3,000° F. and low-temperature insulations for service down to minus 400° F.

A portion of the exhibit features Trantex Tape, a cold-applied protective wrap for underground gas and oil pipe lines and overhead piping. Transite pipe is also shown along with a demonstration of special couplings for joining this asbestos-cement pipe. Special fittings, also of asbestos and cement, are displayed. These fittings include crosses, tees, ells, wyes, unions, floats, flumes, swaged nipples, globe valves, automatic dump valves, and salt-water siphons.

The display of asbestos building materials includes corrugated Transite, flat Transite, and Marinite. In addition to the asbestos materials, Johns-Manville will also display its line of Celite (diatomaceous silica) filter aids for processing water used in the secondary recovery of oil by flooding. One of the featured products is nonmetallic oil seals, molded in one piece.

Johnson-Fagg Engineering Co.
Tulsa, Okla.
29 Park Lane

In attendance

DOUGLAS O. JOHNSON, LEO W. FAGG, CHESTER L. SHARP, R. B. STANBERY, V. A. KELLY, JOE POWELL, C. S. VOGEL, J. O. GRAVITT, T. L. HILTON, A. V. HUCKABEE, W. A. HAMMANN.

Johnson-Fagg is showing its "Little Giant" line of compact stuffing boxes and polished-rod clamps along with its J-F dynamometer.

Johnston & Jennings Co.
Oceco Division
Chicago, Ill.
82 and 129 Oklahoma Building

In attendance

I. L. HEIDEMAN, ALLAN EDWARDS, ARTHUR DOOLEY, RUE DOOLEY, GEORGE L. FOX.

This company is featuring its completely new Oceco V-130 Hi-Flo Vapor-Tite conservation regulator. In addition to this new product, the company is showing its Oceco gage hatch, manhead, pressure-relief valves, flame arrestors, water drawoff valves and gages.

Johnston Pump Co.
Pasadena, Calif.
59N North Area

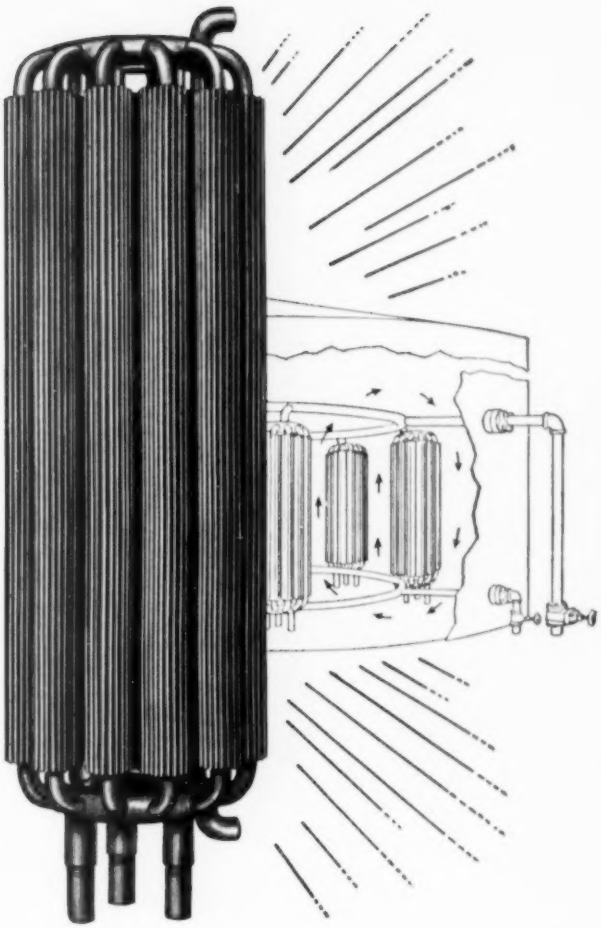
In attendance

K. G. LUNDIE, REX CROSS, DAN MYER, Johnston Pump Co.; H. W. GILLI-

BROWN FINTUBE

Thermo-Flo

TANK HEATERS



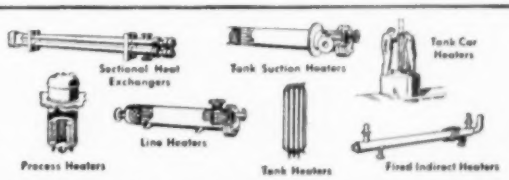
. . . Greatest Improvement in Tank Heating in 30 Years

The old practice of heating the contents of a bulk storage tank with a coil buried in sediment on the bottom of the tank has now become obsolete. Brown Thermo-Flo Tank Heaters are not only more efficient but usually ***cost less,*** plus their installation, ***than the cost of just installing*** a coil of equivalent capacity.

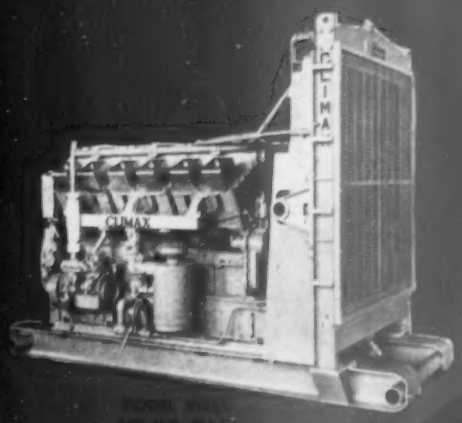
Vertical mounting of Brown Thermo-Flo Heaters on legs 12 inches above the tank bottom — prevents any deposits from settling on the heating surface; avoids losing the heat formerly wasted in heating the tank bottom and the layer of sediment; and leaves the bottom of the tank uncluttered and easy to clean.

Material adjacent to the finned surfaces is heated quickly and rises rapidly forming a thermal siphon or flow in the tank (see view above), that assures extremely efficient heating and prevents any stratification of temperature or gravity. Easily and quickly installed in new — or existing tankage. Widely used and highly endorsed by management, operating and maintenance departments. Write for bulletin.

BROWN FINTUBE CO.
Elyria, Ohio



NEW YORK • BOSTON • PHILADELPHIA • PITTSBURGH • BUFFALO • CLEVELAND • CINCINNATI • DETROIT • CHICAGO • ST. PAUL • ST. LOUIS • KANSAS CITY
MEMPHIS • BIRMINGHAM • NEW ORLEANS • SHREVEPORT • TULSA • HOUSTON • DALLAS • DENVER • LOS ANGELES • SAN FRANCISCO • and ST. THOMAS, ONT.



HISTORY IS BEING MADE IN THE ENGINE FIELD

Literally millions of Climax "horses" are making engine history by providing more compact and more economical power for industrial operations. Year after year, those who demand dependable, power-packed engine performance turn to Climax. For good reasons, too! Tens of thousands know that Climax Blue Streak Engines are built to endure the toughest kind of service with minimum maintenance. And when maintenance is required, they are assured of unsurpassed service from strategically located distributors with the knowledge, experience and complete facilities to give your particular problem immediate attention. See your nearby Climax distributor for full details.

climax

BLUE STREAK ENGINES

Made by Climax Engine and Pump Mfg. Co.
Factory and General Offices: Clinton, Iowa
Oil Field Sales Office:
123 Continental Ave., Dallas, Texas

FOR UNEQUALED ENGINE SERVICE

...LOOK TO ANY OF THESE DEPENDABLE CLIMAX DISTRIBUTORS

Wilson Engine & Equipment Co.
Bakersfield, Calif.
Long Beach, Calif.
San Francisco, Calif.

Vern Walters Company
Casa Grande, Ariz.
Coolidge, Ariz.
Phoenix, Ariz.
Mariana, Ariz.
Willcox, Ariz.

Harry Cornelius Co.
Albuquerque, N. Mex.

Equipment Supply Co.
El Paso, Texas
Dell City, Texas
Van Horn, Texas
Pecos, Texas

Diesel Equipment Co.
Wichita, Kansas
Great Bend, Kansas

Diesel Power, Inc.
Perryton, Texas
Amarillo, Texas
Firona, Texas
Plainview, Texas
Clovis, N. Mex.

Diesel Power Company
Fairview, Okla.
Miami, Okla.
Tulsa, Okla.
Oklahoma City, Okla.
Duncan, Okla.

Stewart & Stevenson Services, Inc.
Lubbock, Texas
Odessa, Texas
Midland, Texas
Wichita Falls, Texas
Dallas, Texas
Longview, Texas
San Antonio, Texas
Corpus Christi, Texas
San Juan, Texas
Brownsville, Texas
Houston, Texas

Lewis Diesel Engine Co.
No. Little Rock, Ark.
Memphis, Tenn.

United Tool Company
Shreveport, La.
Monroe, La.

Taylor Machine Works
Jackson, Miss.
Louisville, Miss.

George Engine Co., Inc.
Lake Charles, La.
Houma, La.
Golden Meadow, La.
Morgan City, La.
Delcambre, La.
Empire, La.
Baton Rouge, La.
Vicksburg, Miss.
Harvey, La.

NEW DISTRIBUTOR LOCATIONS BEING ESTABLISHED

Northwestern Division

Edmonton, Canada
Calgary, Canada

STATES

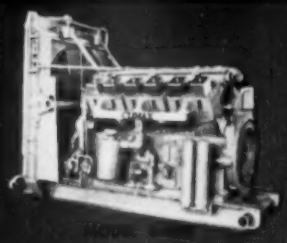
Washington
Oregon
Montana
Idaho
Wyoming
Nevada
Utah
Colorado
North Dakota
Nebraska

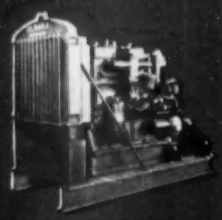
Central and Southeastern Division

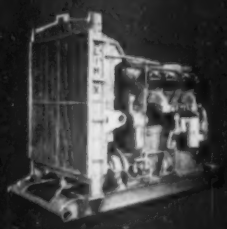
STATES

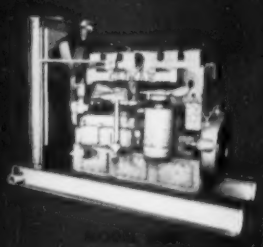
Georgia
Florida
Illinois
Indiana
Kentucky
Ohio
Pennsylvania
West Virginia
Virginia
Alabama
North Carolina
South Carolina

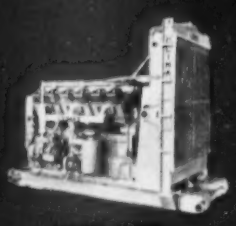
IN THE OIL INDUSTRY... THERE'S A CLIMAX BLUE STREAK ENGINE FOR EVERY REQUIREMENT

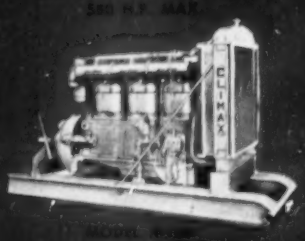


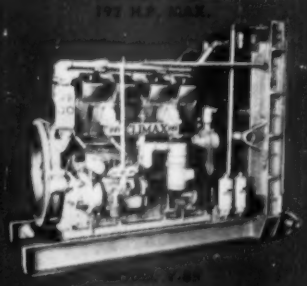






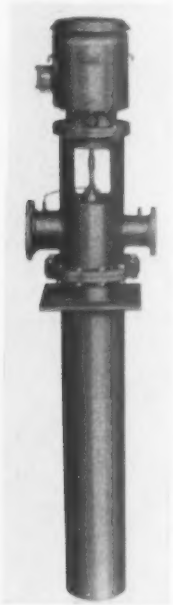






LAND, Power Machinery Co.

This company is displaying two types of pumps. One unit is an operating model, made of clear plastic to full scale. It is designed for handling hot or volatile liquids. The other is an actual gasoline-dispensing pump for service stations, bulk plants, aircraft refueling, and similar services.



Johnston vertical turbine pump for hot-well or volatile-liquids service.

Johnston Testers, Inc.
Houston, Tex.
Block 104

In attendance

T. M. JOHNSTON, J. E. SMITH, W. F. BETTIS, J. H. FLANAGAN, WAYNE GORRELL, C. C. GLOVER, W. E. HILTPOLD, A. W. SMITH, R. W. FOSTER, E. L. BLACKMAN, C. C. McWHERTER, BILL GRIFFIN, D. C. MAYES, JOE D. SMITH, T. L. LONG, GLEN FOX, W. L. PHILLIPS, C. F. JOHNSTON, H. L. COURTNEY, R. D. STANIER, W. A. REYNOLDS, W. H. GRIFFIN.

Jet and expendable torpedos, jet-perforating equipment, together with the latest developments in drill-stem testing and reservoir-analysis equipment are exhibited by Johnston Testers, Inc.

S. M. Jones Co.
Division of Buffalo Eclipse Corp.
Toledo, Ohio
15-16 Oklahoma Building

In attendance

L. J. PUNDT, HOLT McWORKMAN, W. H. RITTERBUSCH, JR., W. E. BARFIELD, H. F. BRATCHES, W. E. HARVEY, WM. P. McBEE, W. C. MEEKS, G. H. ROSS, CHARLES W. TURNER, W. M. WARE, PAUL WOLFE, CLARENCE WEIGLE, FRANK OATMAN, M. B. JONES, ED FLAVELL, PHIL MURPHY, DAN NOLAN.

This company is presenting part of its complete sucker-rod museum, in which the evolution of the present-day sucker rod is depicted. Also on display is the original sucker-rod forging machine designed and built in 1891 by Sam Jones. The museum covers many important advances made in sucker-rod manufacture, starting with the original hickory or ash rods with wrought-iron box and pin joints riveted to the wood.

Also exhibited are such developments, as Dardelet self-locking pin threads, conical-shouldered joints, Wescott undercut, hollow sucker rods, bronze, monel, stainless steel, nickle-plated, copper clad, rubber coated, lead coated, chromium plated, zinc coated, and plastic-coated rods.

Jones & Laughlin Steel Corp.
Supply Division
Tulsa, Okla.
Block 1

In attendance

L. G. SUTTER, R. J. WOODS, JR., A. G. BASTIAN, J. T. BATCHELOR, W. O. HARDY, O. A. BERGMANN.

Several lines of equipment handled by Jones & Laughlin Steel Corp.'s Supply Division are being exhibited by the respective manufacturers.

Tubular products, containers, and wire rope including its Spring-Center drilling line and new Plastic-Core line are displayed by Jones & Laughlin. A highlight of the J. & L. Steel display is a moving exhibit of the latest methods for producing open-hearth steel. This reduced-scale plant is operating through a complete cycle starting with "bazooka shot" tapping of the open-hearth furnace.

Midwest Piping & Supply Company is displaying its full line of welding, fttings, and fabricated piping. St. Louis Cordage Mills is exhibiting its manila cordage products. Bottom-hole pumps and parts are shown by Axelson Manufacturing Co. Its line of electric motors are displayed by Century Electric Co. Republic Rubber Division, Lee Tire & Rubber Co. is displaying its mechanical rubber products. Slush pumps, swivels, rotaries, and blocks are shown by Wheland Co. Cabot Shops, Inc., is displaying its line of pumping units. J. & L. is showing its irrigation system. Rossendale Ruboil Co. is exhibiting its Reddaway brake lining and blocks.

Joyce-Cridland Co.
Dayton, Ohio
49-50 Texas Building

Joy Manufacturing Co.
Pittsburgh, Pa.
Block 7

Company is featuring its new motorized drill rig, a truck-mounted, self-contained unit, designed for fast shot-hole drilling. The rig has a rated capacity of 750 ft. using 2⅜-in. drill pipe. Its rotary table has a 6½-in. opening, and the mast is rigged to handle 10, 15, or 20-ft. pipe.

The rig's design incorporates power makeup and breakout, fast retract on hydraulic feed cylinders, double-drum arrangement on single shaft, both drums with equal capacity, and power takeoff from truck engine.

A straight kelly drive machine, the new rig is built with either hydraulic, feed cylinder or hydraulically-actuated, chain pulldown.

In addition, the company is showing its 1,800 and 3,000-ft. rigs, portable air compressors, rock drills, paving breakers, spaders, back-fill tampers, hoists, air motors, and Axivane fans.

J. P. Machine & Tool Co.
Oklahoma City, Okla.
42N North Area

Justrite Manufacturing Co.
Chicago, Ill.
17 Scientific and Technical Building

In attendance

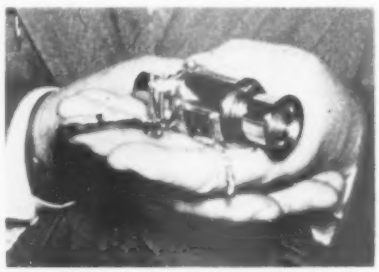
CHARLES S. PACKER, SR., J. N. GRIMSHAW, PAUL V. MILES, WARREN MITCHLER, HAROLD DAHL.

This company is showing for the first time a new heavy-duty safety lantern. Featured along with this new item is the entire line of Justrite products including safety cans, portable hand lanterns and other equipment for the oil industry.

Kelite Products, Inc.
Los Angeles, Calif.
16N North Area

Ben F. Kelley Co., Inc.
Tulsa, Okla.
36-37 Silver Lane

Featured by Ben F. Kelley Co., manufacturer and developer of power slips as well as the KelCo spinning-line and breakout catheads, is a set of working Kelco air-operated drill-pipe slips. These catheads are also shown on the draw works of various rig exhibitors.



This scale-model KelCo spinning-line cathead is included as a part of a miniature operating rig.

Kennametal, Inc.
Latrobe, Pa.
89N North Area

In attendance

LEE GRUMBAUGH, ARCHIE MORRIS, PHILIP M. McKENNA, DONALD C. McKENNA, W. D. TURNBULL, RICHARD L. FARRIS, W. L. KENNICOTT, E. H. JOHNSON.

The featured exhibit is sintered carbide balls and seats. The new lightweight ball weighs only two-thirds as much as steel and its most important single substance is titanium. Also displayed are Kennametal special parts used by other manufacturers in their standard products for the oil industry.

Kennametal ball and seat.

Key Co.
East St. Louis, Ill.
35N-36N North Area

In attendance

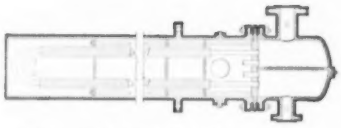
B. J. GROSS, G. A. MILLER, L. W. MATTHEY, B. R. BRAZNELL, L. J. FUNDIS, F. H. HINDMAN, M. J. MASEL, J. H. RICHARDSON, H. FISHER.

Key Co. is featuring its various products

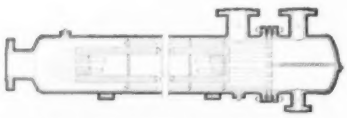
Free-Flowing Fluids

with

SUPERIOR TANK HEATERS



Open-end Type C1U is designed for internal installation . . . applying heat directly at the point of suction.



Type C2U provides for installation exterior to the storage tank. Tubes may be bare, or finned, as required.

SUPERIOR TANK HEATERS are used to heat viscous fluids pumped from storage *without the necessity of heating the entire contents of the storage tank.* With steam, or other heating medium supplied to the "U" tubes, only the liquid withdrawn from storage is heated to the required temperature.

SUPERIOR Heat Exchangers are available in a wide range of sizes and in a variety of shell, tube-bundle, and head designs to meet all conditions of heating, cooling, condensing and evaporating.

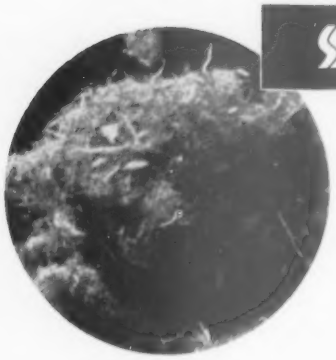
Our engineering staff invites your inquiry regarding any proposed installation . . . as a basis for a specific engineering recommendation. For details of construction, write today for fully illustrated Catalog 520.

for performance you can **BANK** *on*

SUPERIOR COMBUSTION INDUSTRIES INC.
TIMES TOWER, TIMES SQUARE, NEW YORK 18, N.Y.

SUPERIOR
HEAT EXCHANGERS

IMPORTANT FACTS ABOUT Weyerhaeuser Products to



ACTUAL SIZE

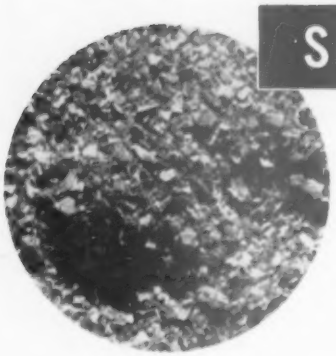
SILVACEL

Fibrous material blended with flat, spongy flakes—

A scientifically designed blend of specially prepared fibrous materials of controlled length, combined with flat spongy flakes. This blend provides a wide range of particle-size and shapes which is ideally suited for complete sealing in the most difficult fractured and vugular formations. Bridging is quick, forming a tough fibrous mat which becomes imbedded with mud to speedily form a tight seal.

Characteristics of SILVACEL:

- Comes in easy-to-handle, loosely-packed 40-lb. bags.
- Pourable; mixes readily with the mud—is easily "wet" by mud.
- Will not rot, deteriorate or sour in storage or in the hole.
- Is readily pumped through ordinary rotary drilling equipment and does not "rope" or "ball-up."
- Does not break down through circulation.
- Stays in suspension until deposited.
- Has no harmful effect on mud properties.



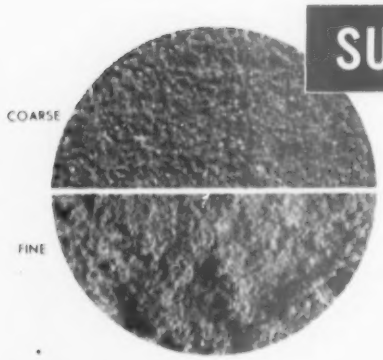
ACTUAL SIZE

SILVAFLAKE

Spongy, flake-like granular material—

A low-cost bridging material of spongy, flake-like structure used in the control of lost circulation. Silvaflake, due to its wide range of particle-size and shape and its natural plasticity, effectively forms an impervious seal that prevents further loss of mud and/or mud filtrate to fractured and vugular formations. The seal thus formed effectively prevents further hydraulic breakdown of the formation.

A complete bridging material alone, Silvaflake is also used in combination with conventional fibrous bridging agents. Silvaflake pours readily from easy-to-handle 50-lb. bags—Silvaflake will not deteriorate, sour or decay and has no adverse effect on mud properties.



ACTUAL SIZE

SUPERBRIDGE

Tough fiber to seal off porous thief formations—

(Available in Coarse and Fine Grades) Superbridge is a highly effective bridging material for porous thief formations. Because of the unique size and shape of its particles, Superbridge combats lost circulation problems that conventional lost circulation products fail to correct. In addition to functioning alone, Superbridge is often added to other bridging materials, rendering these more effective. Superbridge and Silvaflake make an excellent combination because of a broad range of particle-size and shape.

Superbridge passes through the average shaker screen without by-passing the screen, thus permitting drilling to continue in the usual manner—an important characteristic not usually found in ordinary bridging materials.

AVAILABLE AT MOST SUPPLY COMPANIES

Combat Lost Circulation

Fast, effective action—at lower cost—is the aim of Weyerhaeuser forest products research and development

As ONE of the nation's largest producers in the forest industry, Weyerhaeuser has long engaged in research and development toward obtaining maximum values from their tree farms located in the great tree-growing areas of the Pacific Northwest. Cellulose and wood fiber products have always played an important part in the ever-changing oil well drilling industry. Thus it was logical that this Company some years ago assigned a team of skilled research engineers to work with members of the oil well drilling industry in developing products of exceptional effectiveness and economy for drillers. The resulting products proved themselves so successful in the field that specially engineered quality-controlled plants are now producing them in trainload volume. Supplies of both raw materials and finished products are available in dependable, unlimited quantities. Shown at left are Weyerhaeuser products engineered and tested to prevent and control lost circulation. Another range of products—SILVACON and SILVATAN (developed from components of Douglas fir bark)—have proved effective drilling mud conditioners. Field engineering services are always available to users of Weyerhaeuser products.

IN CONVENIENT, EASY-TO-HANDLE BAGS

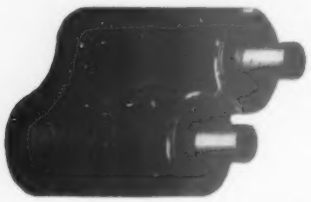
WRITE FOR CATALOG—For more complete information and results of field tests on Weyerhaeuser oil well drilling products. Samples of products will also be sent on request. Write SPECIAL PRODUCTS DIVISION, Weyerhaeuser Timber Co., Tacoma, Wash.

WEYERHAEUSER FOREST PRODUCTS

LOOK TO WEYERHAEUSER

for new and better products from our tree farms. This Company is committed to a policy of "tree farming" to provide an endless supply of raw materials . . . and continuous research and development to expand and improve the services rendered by wood, fibers, cellulose, the components of bark and all the timber harvest.

SPECIAL PRODUCTS DIVISION, Weyerhaeuser Timber Company, TACOMA, WASHINGTON



Key Co.'s Type 7,000 return-bend fitting.

including refinery return-bend fittings, cast-alloy welding fittings, tube expanders, maintenance tools, and joint sealing compounds.

Keystone Supply Co.
Nowata, Okla.
36 Park Lane

In attendance

M. L. ROBERTS, J. L. COWAN, C. H. RAINWATER, ERNEST ARNOLD, J. D. HANCOCK, F. M. COOK, R. B. FARRELL.

An associate exhibitor with Treat-Rite Chemical Co., Inc., Keystone Supply Co. is demonstrating its Western chemical feeders. The demonstration is set up to show what happens in the chemical treatment of water for injection in secondary recovery of oil.

K. & G. Tool & Service Co., Inc.
Houston, Tex.
Block 207

In attendance

JOHN H. KIRBY, H. ROBERT H. GARRETT, JOE R. VANCE, J. E. MORGAN.

Various K. & G. tools made up this exhibit. Included are a permanent magnet-type fishing tool for removing hard-to-recover metallic junk; diamond, core-barrel magnet, designed to run inside of inner barrel of various makes, types, and sizes of core barrels. An overshot, magnetic fishing tool which goes over tubing to recover junk between tubing and casing and a magnetic, junk-sub, designed to run between bit and drill collars.

Magnetic field of the K. & G. fishing tool is controlled and localized directly at the pole plate. The magnet, made of material developed by General Electric, has a pickup capacity of from 250 to 1,200 lb., depending upon the size of the tool. The tool can be run on tubing, drill pipe, and on wire line in cases where hole is clean and free from cuttings.

K. & G. magnetic fishing tool.

The K. & G. core-barrel tool is so constructed that when it is inserted in the diamond core barrel, the magnetic field is directly at the bottom of the core head. It is capable of picking up broken teeth, bearings, tong dies, or any other small junk on the bottom of the hole. As the core is cut, the core-barrel magnet travels up the inner barrel, carrying with it all junk recovered from the bottom of the hole, thus eliminating possible damage to the diamond head.

Junk such as overshot slips, cutting-tool knives and slips, milled cuttings, and the like which lodges between casing and tubing may be removed with the K. & G. overshot fishing tool. The tool also has an inner floating magnet to recover junk which might lay on top of tubing. By use of overshot extension pipe, this tool may be run at various depths below the top of the tubing, depending upon the location of the fish.

Controlled-field magnets recessed into the sides of the K. & G. junk sub eliminate wiping off of junk as string is rotated or removed from the well bore. The magnets are so spaced that all junk must pass directly into the magnetic field. This permits picking up all small junk, which might be washed off bottom and suspended in the fluid column.

King Oil Tools
Houston, Tex.
25 Silver Lane

In attendance

W. E. KING, A. B. CORMAN, L. P. SACRE, H. W. MATTHAEI, T. R. McINTYRE.

A full line of King swivels, circulating heads, and wire-line strippers (oil savers) is displayed. Included in swivel line are King Oil Tool's XV for handling larger-than-usual volume of drilling fluids; its KM for replacement on pulldown-type rigs; the GA for general-purpose drilling for medium service; and its type J for geophysical and shothole drilling.

Kobe, Inc.
Division of Dresser Equipment Co.
Huntington Park, Calif.
Block 11

In attendance

L. T. WOLD, W. F. SLATER, RAY ELNER, H. W. WILSON, V. L. O'NEILL, C. E. EDWARDS, P. H. JAMISON, J. T. LEWIS, A. R. TULLOS, S. S. McDONNOLD.

Kobe's display features its Free-Pumping system and especially designed models to show how the hydraulic well-pumping system works. Equipment on display includes an operating Kobe Free-Pump well head. Central power controls for a multiwell Free Pump lease are displayed along with Kobe power units. Production units in all sizes for handling various depths and fluid volumes are also on exhibit. Of particular interest to reservoir engineers is a cutaway of the equipment used to make rapid bottom-hole-pressure surveys in wells equipped with Kobe Free Pumps.

The explanatory models displayed include one which shows schematically the operation of the Free Pump, and a cutaway of the parallel bottom-hole assembly used in running Free Pump tubing strings. In this display group is one in which a model Kobe Free Pump is circulated up and down a Lucite tubing string in response to the control of a scale-model Kobe four-way valve. Every phase of operation of the Free Pump system within the well is simulated and visible, including the actual stroking of the Free Pump when on bottom.

Koebel Diamond Tool Co.
Detroit, Mich.
260 Oklahoma Building

In attendance

CHARLES J. KOEBEL, ROBERT F. KOEBEL, G. A. REDEBAUGH, JOHN STARK, W. F. FREIDEL, IAN BULLOCK, Koebel Diamond Tool Co.; W. F. PROVINCE, BERT SUTTON, JR., EDWIN KOLER, R. C. WARDEN, FRANK HEADLEY, P & S Engineering Co. and Terra Products, Inc.; O. L. WOOTEN, Rotary Sales & Service, Ltd.

Koebelite ring set diamond bit.

This company is showing its ring-set diamond core bits. Employing the powder-metallurgy technique for setting diamonds, the company produces this type of crown setting to augment its line of insert-type core bits where very large fluid areas and junk clearances are of secondary importance.

Other products displayed include insert-type washover and mill shoes, a design which lends flexibility to the fabrication of shoes with varied diameters.

Koebel Diamond Tool Co.'s associate exhibitors are P & S Engineering Co., Terra Products, Inc., and Rotary Sales & Service, Ltd. Terra Products, Inc., manufactures and services diamond products for the oil industry, and P & S Engineering Co., which handles Koebelite and Terra diamond products, is a manufacturer of diamond core barrels and equipment which also furnishes contract diamond coring services.

Kohler Co.
Kohler, Wis.
40N-41N North Area

Koppers Co., Inc.
Pittsburgh, Pa.
73-75 Texas Building

In attendance

L. J. DIAMOND, E. D. ANDREWS, H. E. CRANE, J. E. B. GIBBONS, R. C. KENAN, ROGER NORRIS, R. C. STROMQUIST.

The Koppers exhibit features a new product, "Impruvol 33," a solution of di-tertiary butyl-para-cresol used as a gasoline antioxidant.

Other Koppers products exhibited are American hammered piston rings, Bitumastic pipe-line enamels, and Bitumastic industrial coatings, Fasts' couplings, and Aeromaster industrial fans.

Korkele Production Engineering Co.
Wichita Falls, Tex.
39 Silver Lane

In attendance

KORK KELLEY, A. L. WHITE, R. K. KELLEY

This exhibit features the company's product design which is based on the principle

PEERLESS BUILDS *Dependable* PUMPS

PEERLESS PUMPS

VERTICAL

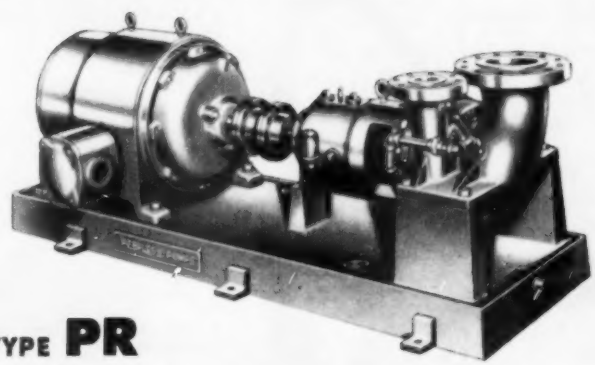
USE THE VERTICAL HYDRO-LINE PUMP WHERE YOUR APPLICATION REQUIREMENTS ARE:

Low System NPSH; Moderate Capacities; High Pressures; High Temperatures; Extreme Installation Flexibility; Optional Mechanical Shaft Seal or Packing Gland Construction; Economical Service and Maintenance; Operational Dependability; Wide Range of Liquid Pumping Services, such as Condensate, Hydrocarbons, Hot or Cold Water, Mild Salt Solutions. For descriptive Bulletin No. B-592, check and mail coupon.

USE THE HORIZONTAL TYPE PR PUMP WHERE YOUR APPLICATION REQUIREMENTS ARE:

Rugged Center-Line-Mount Construction; High Temperatures; High Pressures; High Capacity; Extra Low NPSH Requirements; Optional Use of Mechanical Shaft Seal or Packing Gland Construction; End or Top Suction Design; Dependable Performance with Minimum Maintenance; Availability in Various Alloys; A Complete Range of Sizes; Maximum Parts Interchangeability; Wide Range of Liquid Pumping Services, such as Hot Oil, Butane, Propane, Hydrocarbons, Hard-to-Handle Chemicals and Water. For descriptive Bulletin No. B-1605, check and mail coupon.

HORIZONTAL



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Food Machinery and Chemical Corporation
301 West Avenue 26
Los Angeles 31, California

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COMPANY _____

STREET _____

CITY _____ STATE _____

O & GJ

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Food Machinery and Chemical Corporation
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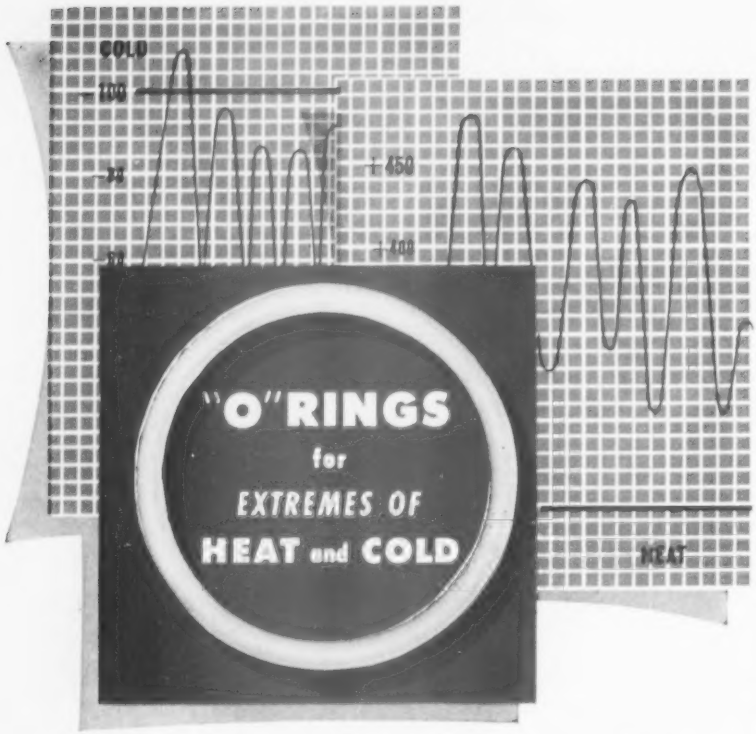
OFFICES: New York; Chicago; St. Louis; Atlanta; Tulsa; Dallas, Plainview and Lubbock, Texas; Fresno, Los Angeles, Calif.; Phoenix; Albuquerque, New Mexico

PEERLESS PUMPS

fmc



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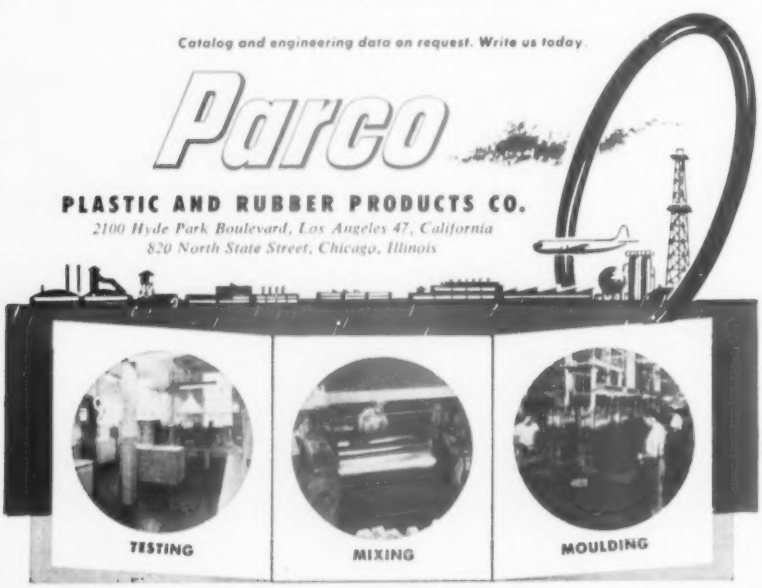
Avoid premature seal failures by selecting the proper "O" Ring materials. For "O" Ring applications that encounter temperature extremes as low as −110°F or as high as +480°F, the use of silicone "O" Rings is indicated. Silicone "O" Rings also provide excellent resistance to chemicals . . . weathering . . . oxidation and moisture. If you have an application requiring "O" Rings to maintain a seal for long periods at either very low or high temperatures, it will pay you to investigate the many properties of silicone rubber. All dash numbers of 6227, 6230 and 6290 series for industrial applications or Army-Navy installations to Specifications MIL-P-5516 (6227 and 6230) and MIL-G-5510 (6290) are available from stock. Silastics and other special compounds are available on order.

Catalog and engineering data on request. Write us today.

Parco

PLASTIC AND RUBBER PRODUCTS CO.

2100 Hyde Park Boulevard, Los Angeles 47, California
820 North State Street, Chicago, Illinois



I.P.E. EXHIBIT DIRECTORY

of separating oil and gas in the well bore. This Korkele product is a new-type, reverse-flow, bottom-hole separator which may be used in high or low-pressure wells having either large or small volumes of gas.

Ladish Co.
Cudahy, Wis.
7-9 Kansas Building

In addition to a wide selection of representative items from its complete line of Controlled Quality pipe fittings, Ladish is displaying a split tee and an extra-long-radius elbow.

Consisting of two half-tee sections, area of reinforcement of the split tee extends completely around both line and branch pipes. The two halves are welded together along the line of bisection so that heat is kept safely away from the main line.

The Ladish 90°3R elbow facilitates pipeline-cleaning operations and materially reduces pressure and frictional losses. The long sweeping radius of the elbow permits cleaning devices to travel through the line at a uniform velocity under normal pressure without jamming.

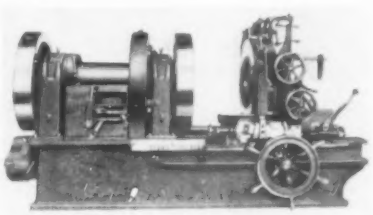
Ladish Co.'s split tee.

Landis Machine Co.
Waynesboro, Pa.
17-18 California Building

In attendance

R. E. YINGLING, R. G. MUMMA, J. R. FUNK, C. J. HARTER.

Along with its 8⅝-in. pipe-cutting and threading machine, Landis is showing various attachments for adapting the machine to various operations. The machine is particularly adapted to threading high-tensile-strength pipe and is designed for cutting off, chamfering, reaming, and flange-makeup operations in addition to threading. Accuracy of thread form and finish are among its outstanding features.



Landis receding chaser pipe-threading and cutting machine.

Lane-Wells Co.
Los Angeles, Calif.
Block V

In attendance

R. L. ALDER, SHANNON BAKER, J. M. BARNETT, E. E. BEAUCHAMP, RAY E. BENJAMIN, W. D. BISHOP, F. O. BOHN, O. T. BRIGHT, JOHN D. BURNS, R. E. BUSH, J. L. P. CAMPBELL, TOM CATON,

REFINERY PROCESS NEWS

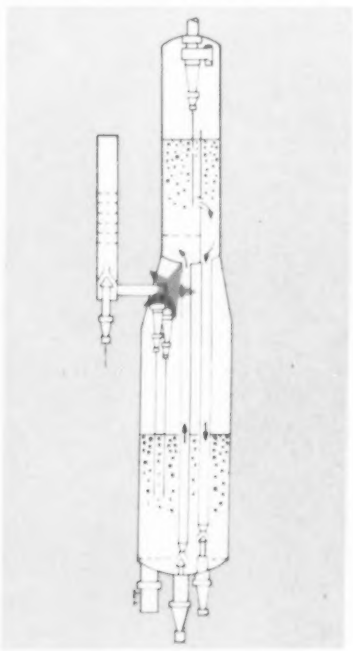
PUBLISHED BY REFINERY PROCESS DIVISION, THE M. W. KELLOGG COMPANY MAY 1953

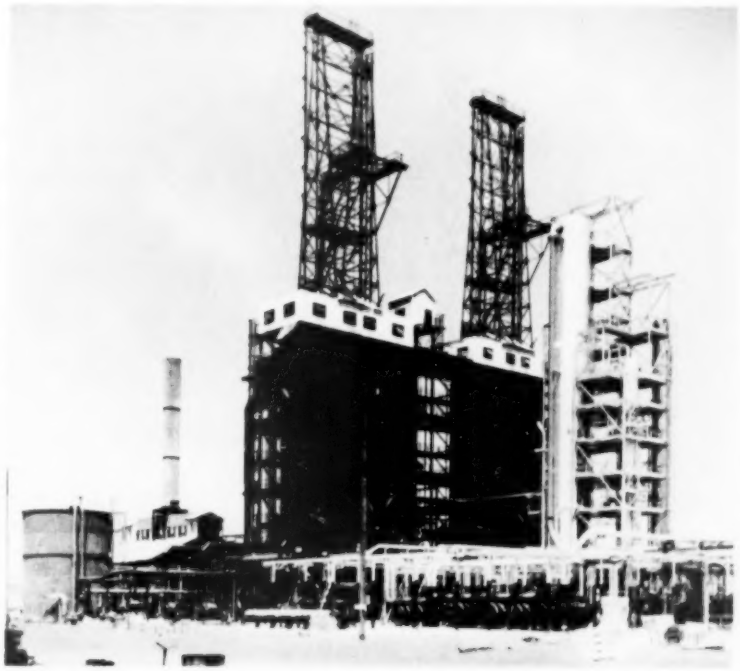
Simple Change in Orthoflow Unit Radically Reduces Catalyst Loss!

A comparatively simple modification in the regenerator of the first domestic Orthoflow unit has radically reduced amount of catalyst lost with stack gases. Tests over a period of better than two months prove that the catalyst loss factor of the Orthoflow is now as low as that of the best side-by-side Fluid units. Gasoline yields from this unit also continue to match the best yield records of the conventional crackers.

While designed for an 8300 BPD throughput, this first unit has been operating on synthetic MS catalyst at 9300 BPD — with conversion maintained at 67% because of the weak fuel oil market. In operation, the debutanized gasoline averages 93 octane clear, despite the fact that a certain percentage of naphtha is present in the feed.

The modification made in equipment to effect the catalyst saving does not alter the basic design of Orthoflow units nor affect their low investment advantages. Currently nine other Orthoflows are either operating, under construction or being engineered.





Changing Product Economics Increases Interest in Delayed Coking Process

In view of the deteriorating market for residual fuel oil in certain areas and no indications that it will greatly improve in the future, refiners in many parts of the country are reaching the decision that a coking step is the most logical solution to this economic problem.

Not only has the moderate winter piled up supplies of residuals in several sections of the country but basic industry uses have continued to slack off. Exports are down and no one can reliably predict that import restrictions will not be lifted.

While this situation does not obviate the use of other feed preparation steps (for example, Kellogg was named just recently to design and erect a 55,000-BPD vacuum flasher on the West Coast and is currently building a 28,000 BPD solvent deasphalter on the Gulf Coast) it does place Delayed Coking in a key position.

Petroleum coke is marketable today in virtually every part of the country — in contrast with the situation a few years ago when it had value only as refinery fuel in a number of locations. Further its price ranges as high as $40 a ton or more, depending on quality. In addition to customary uses, there is an increasing demand for petroleum coke in the manufacture of the carbon electrodes used in aluminum production. Roughly seven-tenths of a pound of petroleum coke is required to produce one pound of primary aluminum.

All-in-all, it appears that the U. S. and Canada will consume well over a million tons of petroleum coke this year. By 1955, this same potential market may rise by nearly 50%.

The following brief economic evaluation of two major feed prep steps highlights their economic relationship under current market conditions. The study is based on

(continued on following page)

REFINERY PROCESS NEWS

CONTINUED FROM PRECEDING PAGE

Delayed Coking . . . cont.

a typical refining sequence including recycle Fluid cracking, thermal reforming of naphtha, cat poly and alkylation. Feed was established as 40,000 BPD of 38.6° API paraffinic crude, topped to 32.5% bottoms, plus 4000 BPD of 26 lb. casinghead.

YIELDS, VOLUME % ON CRUDE

	Vacuum Dist.	Delayed Coking
Premium Gasoline–93 CFR-R	13.2	14.0
Regular Gasoline–86 CFR-R	54.1	56.1
Total Gasoline	67.3	70.1
Kerosene	12.0	12.0
Furnace Oil	11.4	10.7
Fuel Oil	10.1	3.0
Gas (fuel oil equivalent)	8.3	11.0
Coke (recoverable)	—	5.4

ASSUMED PRICE STRUCTURE

	Gulf Coast Unit Price	East Coast Unit Price
Premium Gasoline—93 CFR-R, per Gal.	$0.1225	$0.1385
Regular Gasoline—86 CFR-R, per Gal.	0.1125	0.1285
Kerosene, per Gal.	0.0925	0.1075
Furnace Oil, per Gal.	0.08625	0.0975
Fuel Oil, per Bbl.	1.63	2.10
Gas (fuel oil equivalent), per Bbl.	0.66	2.10
Coke (recoverable), per Ton	10.00	10.00

ECONOMIC COMPARISONS

	Delayed Coking
Incremental Credits over Vacuum Distillation, per year	
East Coast	$1,207,000
Gulf Coast	1,153,000
Incremental Investments in Processing Equipment	
East or Gulf Coast	1,300,000

New Low Cost Desulfurization Demonstrated

Recently completed at Llandarcy by Anglo-Iranian Oil Company, Ltd. this 3,500 BPD Autofining unit is typical of a type of plant now being licensed on a worldwide basis by Kellogg. In view of the increasing quantities of sour crudes being used by domestic refiners, a desulfurization process like this one could be of great importance to processors who are having difficulty meeting sulfur specs for diesel and heating oils.

Autofining is fixed-bed catalytic desulfurization designed to treat all types of distillate stocks except those which include a high percentage of unsaturates. It is a low temperature, moderate pressure, high space-velocity process which provides an excellent low cost means of producing sweet distillates from sour crudes with extremely low liquid volume losses and with high sulfur reduction.

For a unit of 3,500 BPD capacity, the direct operating cost per barrel of feed ranges from about 11 cents for gas oil to 10 cents for kerosene. This can be compared with conventional sulfuric acid treating costs of 48 and 16 cents respectively. Investment cost for an Autofining unit is somewhat greater than that for acid treating. Nevertheless, incremental payout time for the new process over acid treating is approximately one year for gas oil operation and slightly longer for kerosene operation, depending on sulfur reduction.

For further information, technical data, etc., on any refining process, write

REFINERY PROCESS DIVISION
THE M. W. KELLOGG COMPANY
225 Broadway, New York 7, N. Y.
Also Jersey City,
Los Angeles, Tulsa, Houston, Toronto, London and Paris
KELLOGG PULLMAN

ARGENTINIAN REFINERY . . . 75% COMPLETE

Work has reached the 75-per-cent-completion stage on a 28,300-BPD catalytic refinery in the Argentine. The new plant is being erected by Yaciementos Petroliferos Fiscales at Eva Peron (formerly La Plata) and will be called the Presidente Peron Refinery.

Shown are two of the major units, vacuum distillation to the left, and straight-run gasoline fractionation to the right. Other units, being constructed by YPF under the supervision of Kellogg Pan American Corporation, include a Fluid catalytic cracker, an alkylation unit and one of the world's largest Delayed Cokers. In addition, there will be two crude units, one of 21,000 BPD capacity and the other charging 7300 PBD. Thermal cracking and catalytic polymerization are also part of the sequence.

I.P.E. EXHIBIT DIRECTORY

CHARLES CLARK, CARL COMBS, J. E. COMPTON, A. C. H. COOKE, J. D. CRUCE, LYLE DILLON, R. B. DOWNING, J. D. DUNIGAN, R. S. DURKEE, G. S. FLANDERS, V. L. FORSYTH, R. J. GAMBERG, R. L. GREGG, JR., J. J. HARPER, J. S. HATCHER, M. HAWTHORNE, J. M. HENDERSON, JAMES D. HUGHES, W. A. JOHNSON, C. R. JORDAN, R. W. KEENER, A. J. KERR, C. L. KIRKMAN, J. W. KISER, V. L. LAVIN, LEE J. LOBDELL, W. D. LONG, C. F. LUDWIG, L. V. McCONNELL, D. B. McCUTCHEN, S. W. McGAHA, D. H. McLENDON, H. A. METZGER, K. H. MINER, J. P. MYERS, MILES NABORS, J. J. NEALE, M. P. O'HAVER, C. O. OHL, R. M. OTIS, C. F. PATTERSON, R. A. PHILLIPS, S. R. PITTMAN, B. PUGH, E. A. RADACK, R. M. RUTLEDGE, JR., E. SAYE III, C. E. SHILCUTT, C. B. SNODGRASS, V. C. STEPHENSON, J. C. STICK, B. STORSETH, B. STURDEVANT, F. A. TAYLOR, J. M. TERRY, L. C. THAXTON, C. F. TURECHEK, J. M. WALKER, D. B. WHEELER, R. A. WHITTLESEY, F. M. WILLIAMS, A. B. WINTER, W. D. WITCRAFT.

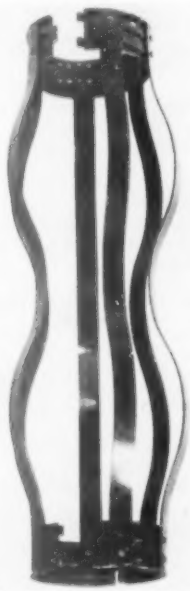
Lane-Wells Co. is featuring working models showing the latest developments in gun perforating, radioactivity, well logging, packers, and bridging plugs. Nineteen separate displays demonstrate advances in services and products offered by the company.

Other exhibits graph the performance to be expected of the complete line of bullet and Koneshot perforators. Actual recording equipment is in operation to demonstrate Dualized radioactivity well logging and examples of area cross-sections and quantitative analysis programs are available for examination.

Standard collar logging equipment is in operation, recording a continuous log of actual casing collars on display.

Cross-sections and operating models of packers and bridging plugs are shown in other displays.

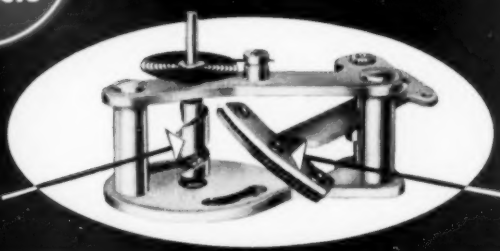
Larkin Packer Co., Inc.
St. Louis, Mo.
51-52 Oklahoma Building
In attendance
W. H. LARKIN, J. J. LARKIN, JR., T. E. ALEXANDER, WILEY FORD, J. T. MEEK.



Larkin Lok-On casing centralizer.

ACCO products

HELICOID GAGES



75 MILLION CYCLES
No Appreciable Wear

HELICOID Gages . . .

No Gears, No Teeth

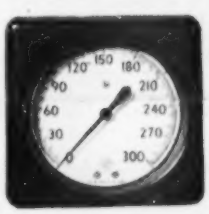
• In a break-down test by U. S. Testing Co., two HELICOID Gages showed no appreciable wear on cam or roller after being pulsated 1200 times per minute for 75 million cycles. Two stainless steel gear type movements, tested similarly and simultaneously, "froze" their gears so pointer would not return to zero after only 500,000 pulsations.

Retain Original Accuracy

Because of the ability of HELICOID'S cam and roller movement to stand up under unlimited pulsations, HELICOID Gages retain original accuracy longer, last longer, and cost less per gage, per year. Movement protects itself by releasing cam from roller at maximum dial graduation. Remeshing is positive, automatic, and instantaneous. No finer gages are made, yet you pay no more than for other quality gages.

Many Sizes, Many Styles

HELICOID Gages are made for vacuum, pressure, or compound service—in all pressure ranges. White, black, or radiant faces. Wall, stem, flush, and panel mountings, or flangeless cases.



See your distributor or write today for CATALOG G-2

ACCO

HELICOID GAGE DIVISION
AMERICAN CHAIN & CABLE

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HELICOID Pressure • Vacuum GAGES

I.P.E. EXHIBIT DIRECTORY

JACK MORRISON, E. D. CURRAN, I. P. ALLEN, G. F. ROBINSON, R. B. MILLER, TED MICHIE, W. C. HUGHES, J. C. GREEN, R. L. RAMBY, G. E. BEEMAN, CLAY FOUTS, F. E. STEVENS, LOUIE FELTS, ALLEN HOKEY, ORVELLE CHISM, DURWOOD RIGGS, JIM EHLERT, J. B. WETSEL, JOHN A. HILL.

The company is especially featuring its Lok-On casing centralizers. These completely new tools have just been introduced to the industry. They are being shown in three different ranges of hole sizes.

Larkin & Co., Inc.
Butler, Pa.
43N North Area

Lauson Co.
New Holstein, Wis.
130-131 Kansas Building

LeBus International Engineers, Inc.
Longview, Tex.
70 Texas Building

In attendance

F. L. LEBUS, SR., F. L. LEBUS, JR., E. J. CALK.

This exhibit consists of LeBus grooving and controlled wire-line spooling system featuring a display of controlled pyramid spooling of wire lines.

LeBus Rotary Tool Works, Inc.
Longview, Tex.
71 Texas Building

In attendance

F. L. LEBUS, SR., F. L. LEBUS, JR., J. S. STAMMER, EVANS F. BURTON, EARL J. CALK, JAY D. DILLON, JESSE W. CALK, JESS J. COX, F. C. BUCKINGHAM, JOE C. KAYE, JOHN E. CUMMENS, HARRY J. WINDMILLER, HAROLD C. GARLICK.

Displayed are a number of LeBus products, including a load binder, snatch blocks, wire-line tail chains, industrial hooks, connecting links, and fishing tools.

Le Roi Co.
Milwaukee, Wis.
Block 203

Le Roi is exhibiting a number of newly developed products. Included in its integrated display of products for the petroleum industry is an unusual pipe-line drill rig with adjustable, boom arms. A new 114-cu.-in. single-cylinder pumping engine, an 844-cu.-in. V-8 engine, and a giant 4,000-cu.-in. 12-cylinder engine dramatize the wide range of Le Roi internal-combustion units. Along with these items, Le Roi's 200-hp. truck engine is exhibited in an Autocar chassis.

Other products featured include the Le Roi Tractair, a self-propelled air compressor, a standard, pipe-line drill rig, pumping engines for artificial lift and gathering and a giant 600-cu.-ft. per minute portable air compressor. Featured with the Tractair is a backhoe attachment for pipe-line ditching and other oil-field construction operations.

The new V-12 valve-in-head internal-combustion engine for use in the petroleum industry wherever heavy sustained loads are encountered is being displayed for the first time. Featured is the recently announced Le Roi-Cleveland Drillmaster pipe line drill rig with adjustable boom arms mounted on a crawler-type tractor. Air for the Drillmaster drill rig is provided by a Le Roi 600-cu.-ft. per minute compressor which is mounted on the tractor and driven through the power takeoff.

A. Leschen & Sons Rope Co.
St. Louis, Mo.
114-115 Texas Building

In attendance

L. E. DRESSLER, JAMES HOFFMAN, C. H. WATSON, C. M. HOLLAND, W. E. PHILLIPS, R. M. KILIAN, KARL F. EWERHARDT.

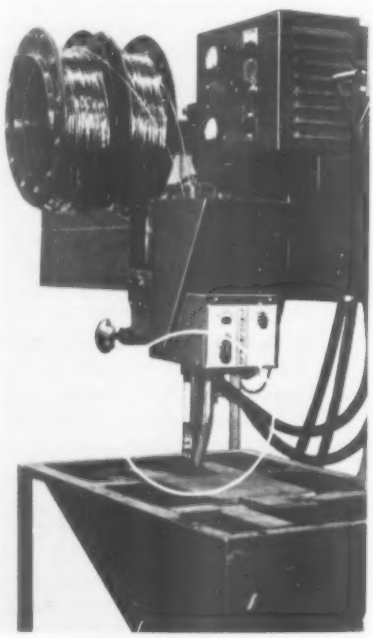
A wide range of sample pieces of wire rope, showing sizes and constructions as manufactured by this firm, are being displayed. In addition, various types of wire-rope slings, including an eight-part sling and a new-type, reusable thimble, are being shown.

Cost, engineering, and service information on Leschen products is being supplied by a staff of engineers and field men specializing oil-country wire rope, at the exhibit.

Lincoln Electric Co.
Cleveland, Ohio
201-202 and 249-250 Oklahoma Building

Several new developments in equipment and welding techniques are being shown at this exhibit. Featured is a new line of a.c. welding machines. The new units complete Lincoln's line of 60, 180, and 200-amp. machines by adding new industrial models of 300, 400, and 500-amp. capacity. The new design replaces previous 300 and 500-amp. machines and incorporates new features as well as mechanical changes.

Also exhibited as new equipment is a flux for hardsurfacing with automatic hidden arc welding. With this flux, a standard mild-steel electrode wire is used, the hardsurfacing elements being contained in the flux and alloyed in the arc.



Lincoln's new Twinarc welder.

A new technique of automobile welding that has already been proved in a limited number of industrial applications is also being demonstrated. This is the twin-arc process of hidden arc welding. It involves the use of two arcs mounted in tandem to deposit metal into a single crater. Speeds up to double those normally obtained with ordinary, automatic welding have been successfully applied to several jobs, notably railroad-car frame building and tank construction.

Lindley, Paul
Tulsa, Okla.
Block 208

Linde Air Products Co.
New York, N. Y.
213-214 and 237-238 Oklahoma Building

(Exhibited by Union Carbide & Carbon Corp.)

Line Scale Co., Inc.
Oklahoma City, Okla.
205-206 Oklahoma Building

Link-Belt Co.
Chicago, Ill.
61-63 Texas Building

In attendance

G. N. HOWSON, B. R. STEWART, T. C. HUGHES, A. V. CONSAVAGE, J. H. SAMUELL, W. J. BRINKWORTH, R. R. HENRY, FOREST SPENCER, R. T. SWEENEY, G. H. WOODY, W. P. STILZ, F. O. BLAKE.

Link-Belt Co.'s three-section exhibit features vibrating screens, chains, and bearings. An operating 2 by 4-ft. shale shaker equipped with a newly designed streamlined mud box for shallow, medium, or deep oil-well drilling highlights the display.

Availability of Link-Belt's precision steel-roller and A.P.I. roller-drive chains from supply stores is the theme of the exhibit's chain section. Lengths of popular sizes of these chains are on display.

In the bearing section, both unmounted radial-thrust bearings, and self-aligning roller bearing pillow blocks in cutaway are displayed. Photo transparencies show applications of these products.

Link-Belt's exhibits are manned by experienced personnel who are available to discuss the products and how they are applied to meet specific requirements.

Link-Belt Speeder Corp.
Cedar Rapids, Iowa
3-4 Silver Lane

In attendance

D. W. LEHTI, G. H. OLSON, R. B. BARNES, L. T. HANSE, G. W. ROLAND.

Exhibited is a scale model of a combination shovel, clamshell, dragline unit, a product of this company. In addition the company is showing a cutaway hookup of its hydraulic control system for shovel-cranes.

Lone Star Steel Co.
Dallas, Tex.
Block 202D

In attendance

WALTER T. MORELAND, JERRY JOHNSON, W. G. WHITSITT, W. J. ROBINSON.

This company is exhibiting samples of its steel pipe-products which include casing, tubing, and line pipe.

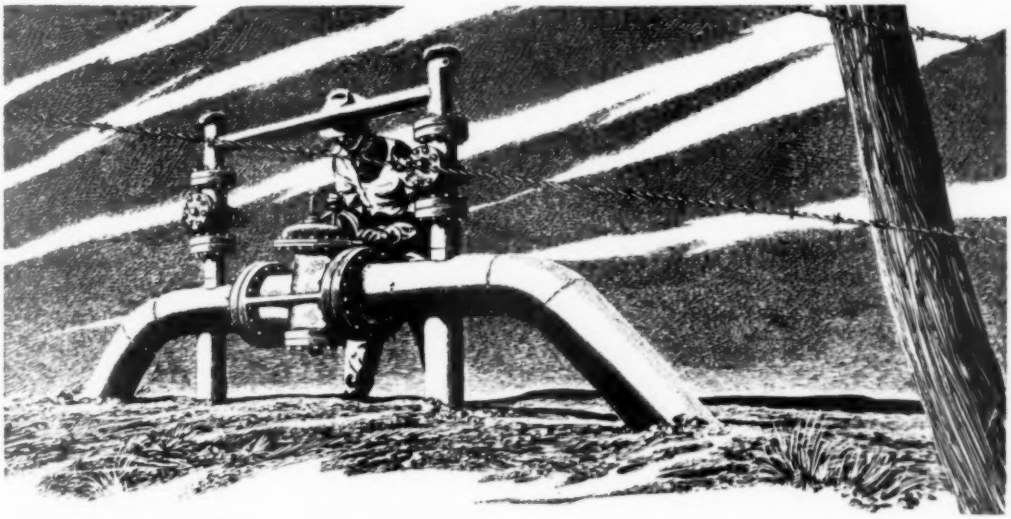
Looney's Sheet Metal Works
Tulsa, Okla.
Block 5

In attendance

HAROLD LOONEY, JAMES LOONEY
(See Midwestern Geophysical Laboratory)

Louis Allis Co.
Milwaukee, Wis.
48-49 Kansas Building

This exhibit shows the company's electric motors for the petroleum industry. Displayed is a 250-hp. explosionproof pump motor incorporating the company's latest type of hazardous-location construction and design along with a cutaway, hollow-shaft motor,



OKLAHOMA.....

An Industrial Empire with Plenty of NATURAL GAS!

Strategically located in the center of the Magic Empire, Oklahoma offers industry an adequate supply of dependable Natural Gas.

Industrial development is not dependent upon any single factor, however important it may be.

Oklahoma has plenty! If you're looking for a wide range of diversified raw materials and natural resources—water, transportation facilities, skilled labor, ideal living conditions and buying power—Oklahoma has them all . . . plus ample NATURAL GAS, the dependable fuel for heat and power.

Oklahoma Natural Gas Company, serving over a hundred cities and towns in Oklahoma for nearly half a century, has an abundant supply of low-priced natural gas to meet the growing industrial, commercial and domestic needs.

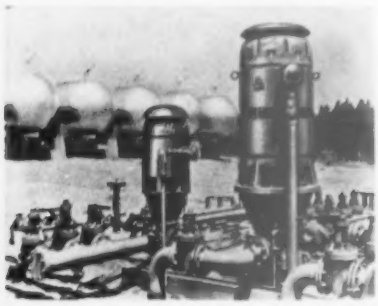
Because of its great underground storage facilities, Oklahoma Natural Gas Company balances the summer-winter demand, thus serving a double purpose. ONG's 6,000 miles of pipelines, hooked up with its gigantic underground storage, enable it to store distress summertime gas that would otherwise be wasted and to adequately supply the peak winter demand to Oklahoma homes and industrial plants at lower cost.

So . . . if you're looking for a place to GO . . . a place to GROW . . . investigate Oklahoma's unusual opportunities.

OKLAHOMA NATURAL
Gas Company

General Office **TULSA, OKLAHOMA**

a cutaway explosionproof totally enclosed fan-cooled motor, and a cutaway Gearmotor. This group of cutaways clearly show the internal construction and design of these motors. In addition are displayed a 100 per cent splashproof motor for outdoor locations or where splashing liquids are present, and a special d.c. motor designed for a special shale-shaker application. Besides these motors, application photographs and literature describing them are available.



Louis Allis motors operating in pumping service.

Loveless Manufacturing Co.
Tulsa, Okla.
Block 107

Lufkin Foundry & Machine Co.
Lufkin, Tex.
Block 3

The entire line of its products, primarily devoted to secondary production of oil, is being displayed by Lufkin. Also displayed are a basic pumping unit equipped with Trout counterbalancing cranks, supplemented by pumping unit with air counterbalance replacing the Trout cranks, and a 20 and 30-ft. hydraulic pumping unit, a new product with reversing features.

Shown in addition are two sizes of Lufkin two-cylinder, two-cycle horizontal engines plus the company's complete line of commercial gearing represented by a typical motor-driven speed increaser. Along with these items is a Lufkin oil-field float.

Other individual displays include a scale-model pumping unit and derrick in operation, cutaway gear box, engine cutaway, and winch cutaway.

Latest addition to Lufkin line, two-cylinder, two-cycle, 50-hp. horizontal engine.

Lukens Steel Co.
Coatsville, Pa.
124-125 Kansas Building

In attendance

MANOLO WIECHERS, GEORGE T. KELLENBERGER, ROBERT H. DUENNER, JR., A. E. HOERSCH, JR., F. H. LARSON, H. F. PETERS, R. J. WEBSTER.

Lukens' exhibit features properties and applications of its alloy steels along with petroleum-industry uses of its clad and alloy-steel heads, and clad steels.

Lufkin Rule Co.
Saginaw, Mich.
121-122 Texas Building

Lunkenheimer Co.
Cincinnati, Ohio
67-68 Oklahoma Building

In attendance

PAUL M. ARNALL, HOMER E. LUNKEN, EDMUND P. LUNKEN, HARRY A. BURDORF, HAROLD H. LAYRITZ, MELVIN W. PAULY, FRED H. HEHEMANN, MARTIN SCHEIDER, ELMER R. TIEBERMAN, CARL B. ROSSER, JR., JOSEPH A. BIRKHEAD, WILLIAM A. BOLES, D. R. DAVIS, BRYAN P. ROLAND, MARSHALL N. STICKEL.

Lunkenheimer is introducing, for the first time, its new 506-page illustrated catalog. In addition to detailed descriptions of the company's line of products, the catalog covers various specifications and technical information.

A demonstration of Lunkenheimer's newest development, its "Non-Slip" handwheel, together with sectioned models of steel, iron A large gage, indicating pressure applied to both new and old-style handwheels, is a part of this operative exhibit.

Lycoming-Spencer Division Avco Manufacturing Corp.
Williamsport, Pa.
South of Block 118

In attendance

FLOYD J. BIRD, D. R. LOOP, D. B. ELFES, H. JOHN McGAFFIGAN, R. J. COWDEN, C. A. PFLEEGOR.

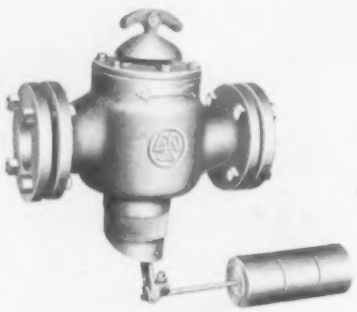
The Lycoming Engineering Division is exhibiting its unit which powers the Beechcraft Twin Bonanza plane and another power unit which is used prominently by Piper Corp. Varied engine applications of the first of a complete line of air-cooled engines for oil-field usage is also being exhibited. One pump unit is being demonstrated under simulated field operating conditions.

Lyons-Coleman, Inc.
Dallas, Tex.
63-64 Oklahoma Building

McCartney Engineering & Research Corp., Inc.
Baxter Springs, Kans.
91N North Area

In attendance

J. A. McCARTNEY, W. J. PEYCKE, JR., WILLIAM OWEN, JOHN B. LELAND, WARD SETTLE, JAMES GRAVITT, MARC LAMKIN, ROBERT ROSS, J. I. NORTON, GEORGE K. SUTTON.



Automatic tank-transfer valve.

This company is featuring its automatic tank-transfer valve. The device is float operated and double acting and can be set to fill each tank in a battery or any tank can be bypassed. As a tank is filling, flow is prevented from passing to the next tank. When a tank is filled the valve automatically opens flow to the next tank to be filled in the battery.

McCord Corp.
Detroit, Mich
72-73 Oklahoma Building

This company is featuring its lubricators and chemical pumps. Shown are a Class "SF" force feed lubricator, a "HVF" high-pressure lubricator for operation at 15,000 psi., and the "VF" lubricator, a nonliquid-type unit that is interchangeable with McCord's "SF" pump. McCord's chemical-pump display includes its "C" and "WT" units. This latter pump is especially designed to handle water-treating chemicals.

McCord SF lubricator.

McCullough Tool Co.
Houston, Tex.
22-24 Park Lane

In attendance

O. J. McCULLOUGH, C. A. MARION, R. W. SMITH, L. W. TOELKE, J. A. WILLIAMS, T. H. FARMER, C. W. HAMILTON, HOWARD GILLESPIE, BILL PERKINS.

Among the items exhibited is an electronic device which quickly locates the stuck point

McCullough radiation well-logger truck.

of all size well pipe and casing. A complete, operating field unit for gamma and neutron radiation logging is also being shown. This device has been designed around the highly efficient scintillation counter. Displayed, in addition to these devices, is an explosive-expansion-electric, wire-line bridge plug, plus jet and bullet perforating equipment and a method of loosening a pipe joint and unscrewing it at the predicted point while reverse torque is held.

SOUTH TEXAS NATIONAL BANK OF HOUSTON

Oil PRODUCTION Loans

Complete financial services for all phases of the oil industry.

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213 MAIN STREET • HOUSTON, TEXAS
MEMBER FEDERAL DEPOSIT INSURANCE CORP.

The one world-famous name in oil fire hazard protection

Throughout the world, more major oil fires have been put out with Pyrene* than any other air foam equipment. Whether *your* fire hazard is in Texas or Tasmania—and whatever it may be—Pyrene can provide you with a built-in air foam system that precisely meets your requirements. For complete information, or the help of a Pyrene engineer, write us today.

*T.M. Reg. U.S. Pat. Off.

Pyrene AIR FOAM

PYRENE MANUFACTURING COMPANY
579 Belmont Avenue, Newark 8, New Jersey

Affiliated with C-O-Two Fire Equipment Co.
The Pyrene Company Limited, England Pyrene Manufacturing Co. of Canada, Limited

NOW... A NEW, COMPLETE
ELECTRONIC
PROCESS CONTROL SYSTEM

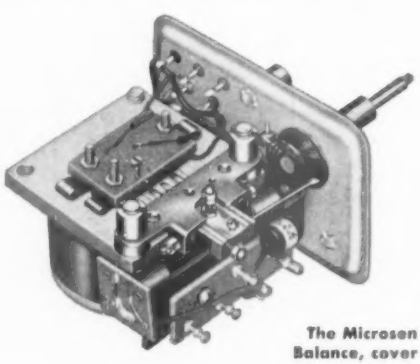
How to *improve quality of control and reduce capital investment* to obtain a given through-put are problems of vital importance in the process industries.

The American Electronic Process Control System — a new and complete electronic system — answers both problems in every respect. It utilizes all the advantages and superiorities of electric transmission of measurement and operational signals. It is the most efficient means ever developed for measuring and controlling temperature, pressure, differential pressure, liquid level and flow. Every requirement for accuracy, dependability, flexibility, low maintenance and convenient servicing is fully satisfied, because the American Electronic Process Control System provides:

1. Virtually no lag in signal transmission.
2. A degree of stability so high that narrower proportional bands can be used.
3. A degree of sensitivity practically impossible to duplicate in any other type of actuation.
4. Complete freedom from dirt, corrosion, leakage and freeze-ups.
5. Standardization of control components that permits interchange at the control panel, regardless of the type of variable under control.
6. Installation of all controllers right in the control house, any distance from the process area, because of the dependability and accuracy of electrical signal transmission.
7. Plug-in components in each instrument to simplify servicing.
8. Adaptability that permits more than one input circuit to be fed into a controller for cascading purposes, without using an additional relay.
9. Flexibility that makes it practical to feed the output signal in series to any number of receivers, without impairing accuracy.
10. Practically no investment in air compressors, filters, pressure regulators, or dryers and their maintenance.
11. Transducers for installation where a tie-in with pneumatic systems is required.
12. Suitability for service with analog and digital computational and print-out equipment for statistical and record purposes.
13. Multipoint-potentiometer type recording of all variables for permanent records.

Major instruments that make up the complete American Electronic Process Control System are pictured here. All are made by Manning, Maxwell & Moore, Inc., a company with more than a century of experience in manufacturing precision instruments for all industry.

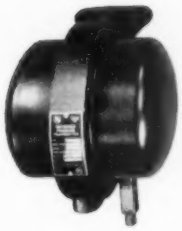
Whatever your process control problem, we welcome the opportunity to demonstrate how the American Electronic Process Control System can improve the *quality* of your control and reduce the size and cost of process equipment for a given through-put. Your inquiry is invited. **Write for Catalog No. 164.**



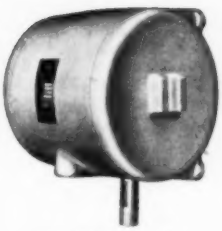
The Microsen Balance, cover removed.

THE MICROSEN BALANCE — a compact, modified Kelvin Galvanometer structure which operates on the force balance principle — is the "nerve center" of American Electronic Instruments. It has a rectified oscillator output of .5 to 5 milliamperes which serves as the transmission signal. The transmission of pressure, differential pressure, temperature, liquid level or flow information is practically instantaneous.

AMERICAN



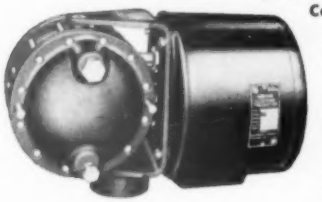
General Purpose Case



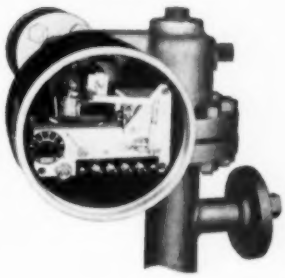
Explosion Proof Case

Vapor Proof Case

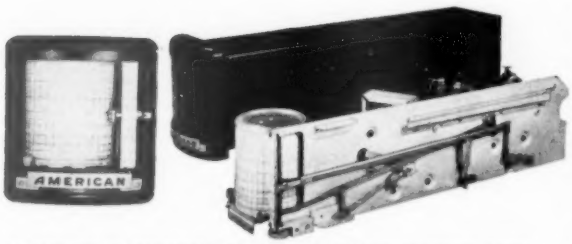
American Electronic Differential Pressure Transmitter with Barton Cell



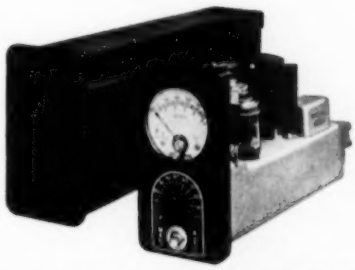
American Electronic Transmitter with Displacement Type Liquid Level Instrument



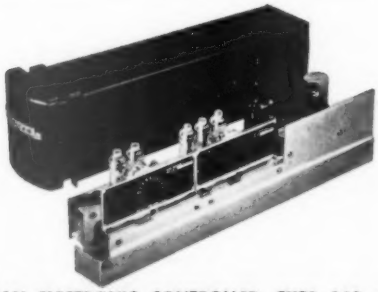
AMERICAN ELECTRONIC TRANSMITTERS are made in types to transmit temperature, pressure, differential pressure, liquid level or flow measurements. *Pressures* are measured by Bourdon tube or bellows elements; *differential pressures* by a Barton differential pressure cell; *temperatures* by standard thermocouples or thermostatic elements; *flow* by a Barton differential pressure cell; *liquid level* by a displacement type unit or a Barton cell. General purpose, vapor-proof and explosion-proof cases are available as required. **Write for Catalog No. 400A.**



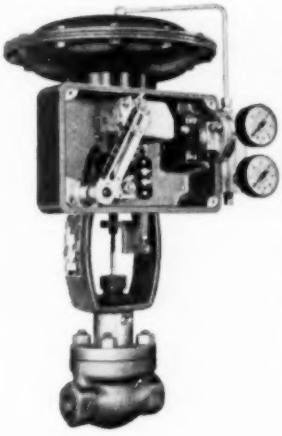
AMERICAN ELECTRONIC RECORDING CONTROL STATION, TYPE 162. A combination of two instruments: (1) a vertical scale card chart recorder which records the value of the process variable; (2) an adjustable set point which determines the control point of the Controller. Calibration of both instruments is indicated on a common scale. Motion of the recording pen is in a straight line; chart speed is ¼" per hour (one card in 24 hours). The American Electronic Indicating Control Station, Type 161, is available for applications where the recording feature is not desired.



AMERICAN ELECTRONIC MANUAL POSITIONER, TYPE 153MP. A regulated source of direct current suitable for remote loading of the electro-pneumatic valve positioner or the electro-pneumatic transducer. It is designed for use with the Type 163 Controller. Provision is made for switching between automatic and manual control without altering output current to the power device.



AMERICAN ELECTRONIC CONTROLLER, TYPE 163. Receives from the Recording or Indicating Control Station a voltage which is the output actuating signal. The output current thus automatically controls the manipulation of a process variable by means of the electro-pneumatic valve positioner or an electro-pneumatic transducer. In addition to proportional actions, *automatic reset* is provided to eliminate the effect that results from a process load change; also *rate action* to reduce the amplitude and duration of transient errors. When used with a manual positioning station, provision is made for "bumpless" transfer from automatic to manual.



AMERICAN ELECTRO-PNEUMATIC VALVE POSITIONER, TYPE 132C. Provides precision positioning of all standard pneumatically powered valves by an electric signal. May be used with either air-to-open or air-to-close valves. A split range model is available for sequential operation of 2 or 3 valves from a single transmission circuit. As an example of speed of response, in a valve having a final volume of 65 cubic inches, the time required to reach full stroke position is less than 3 seconds.

INDUSTRIAL INSTRUMENTS

A product of **MANNING, MAXWELL & MOORE, INC.** STRATFORD, CONNECTICUT

MAKERS OF 'AMERICAN' INDUSTRIAL INSTRUMENTS, 'HANCOCK' VALVES, 'ASHCROFT' GAUGES, 'CONSOLIDATED' SAFETY AND RELIEF VALVES, AIRCRAFT PRODUCTS. BUILDERS OF "SHAW-BOX" AND 'LOAD LIFTER' CRANES, 'BUDGIT' AND 'LOAD LIFTER' HOISTS AND OTHER LIFTING SPECIALTIES.

I.P.E. EXHIBIT DIRECTORY

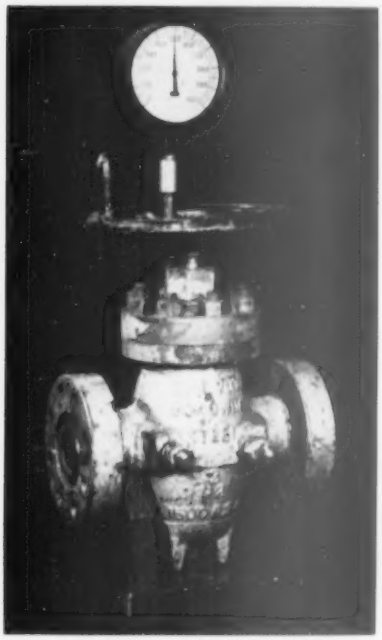
McEvoy Co.
Houston, Tex.
91-92 Kansas Building
In attendance

C. F. JOHNSON, JACK S. SIKES, ALLEN F. RHODES, W. O. HEDRICK, ROBERT EICHENBERG, P. H. MEYERS, A. C. ODEN, JACK ROLF, H. D. STARK, IRA C. WELLS.

Featured items at McEvoy Co.'s exhibit are its valves, christmas trees, gas lifts, and flange protectors. Included in the display is a 2-in., flanged-end, 10,000-psi. test, automatic, self-sealing, through-conduit gate valve. This display incorporates a new test that is being made on the first valve of this size ever manufactured by McEvoy. This valve was in actual service for a number of years. A new 3-in. valve of this same type is also displayed.

In addition, a full-size plastic model of the 2-in. valve is exhibited.

A full-size cutaway christmas tree in which can be seen all of its internal parts is another of the items shown. This tree is equipped with tubing head which accommodates a wide range of casing sizes.



McEvoy automatic self-sealing, through-conduit gate valve.

McFarland Engineering & Pump Co.
Houston, Tex.
5 Texas Drive
In attendance

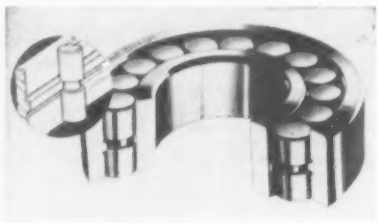
R. E. FULLER, A. E. McFARLAND, G. L. McLAUGHLIN.

McGill Manufacturing Co., Inc.
Valparaiso, Ind.
83-84 Texas Building
In attendance

ANDY ANDERSON, KEITH BROWNELL, DICK SMITH, D. C. WHITESELL.

McGill is showing a new Guiderol bearing along with its other bearing products. The new Guiderol is a cageless roller bearing that eliminates roller skewing in any mounting from horizontal to vertical. The outer race of the bearing is constructed with an integral guide rail. Rollers grooved to this rail are held in place during mounting by a retaining ring that is snapped over the rollers into the roll groove. The outer race and rollers are self-contained, but an inner race is available to complete the assembly.

Other bearing products shown by McGill include its Multirol line.



McGill Manufacturing Co., Inc., Guiderol bearings.

McKissick Products Corp.
Tulsa, Okla.
245-246 Oklahoma Building
In attendance

PAUL V. McGIVERN, W. H. McKISSICK, JR.

This company is displaying its new line of traveling blocks with both the new Byron Jackson Unimatic Hook, and the new Webb Wilson Hydra Hook. In addition, the company's newest lines of snatch blocks, servicing blocks, and allied equipment are displayed at its location in the Oklahoma Building.

McNamar Boiler & Tank Co.
Tulsa, Okla.
1-2 Texas Drive

This exhibit is a pictorial display of the company's equipment and shop capacities used in the fabrication of large pressure-storage vessels for refineries and gasoline plants. One section of the display panel is devoted to the company's L.P.G. and anhydrous ammonia program which deals with small domestic service tanks through to large storage tanks used by dealers.

Another portion of the display is given over to a new skid-mounted booster gas compressor unit which is scheduled to go into production within the next few months. McNamar Boiler & Tank Co., a distributor for Joy Compressor Co., uses that company's compressors in its gas booster units.

C. W. McNeil
Houston, Tex.
83-84 Texas Building
In attendance

F. F. LINDLEY, J. L. DUTCHER, MRS. J. MARTIN.

(See Aetna Ball & Roller Bearing Co., McGill Manufacturing Co., Inc., Rollaway Bearing Co., Inc., Poole Foundry & Machine Co., Shafer Bearing Corp.)

Mack Motor Truck Corp.
New York, N. Y.
Block 202
In attendance

HENRY ROWOLD, GARNER DAVIS, D. C. WHEELER, IRA B. FORREST, JOHN WALKER, EARL BRUNNER, DOUGLAS D. RAYMOND.

Feature of the Mack exhibit is its latest heavy-duty oil-field truck. This new Mack is powered by a 196-hp. Thermodyne gasoline engine of 707 cu. in. displacement. The truck is equipped with power steering, Mack Balanced Bogie, and a 10-speed main transmission with 3-speed auxiliary box. Its chassis mounts a complete oil-field body with winch and special equipment.

Mack Motor Truck Corp.'s latest heavy-duty, oil-field truck.

The Mack medium-duty tractor for both on and off-highway, oil-field hauling is also on display. This 150-hp. tractor is equipped with two-speed axle, five-speed direct transmission, and 10:00-20 tires.

Mack's indoor exhibit introduces a 10-speed duplex transmission in addition to its Power Divider and a torque convertor. These latter units are operating displays.

Macwhyte Co.
Kenosha, Wis.
130-131 Oklahoma Building
In attendance

FOREST J. NELSON, MATT MULICH, R. E. SAWYER, H. S. DERSHIMER, TOM E. BURNS, DON E. WOOD.

This exhibit features the latest developments in wire rope, slings, and special wire-rope parts.

Along with rotary lines, cable-tool lines, casing, core-barrel, and other lines, Macwhyte is showing its braided wire-rope slings. Stainless-steel wire rope, monel-metal wire rope, and special "Safe-Lock" cable assemblies are also displayed.

Magcobar, Inc.
Brownsville, Tex.
Block 11
(See Magnet Cove Barium Corp.)

Magnaflux Corp.
Dallas, Tex.
10-12 Silver Lane
In attendance

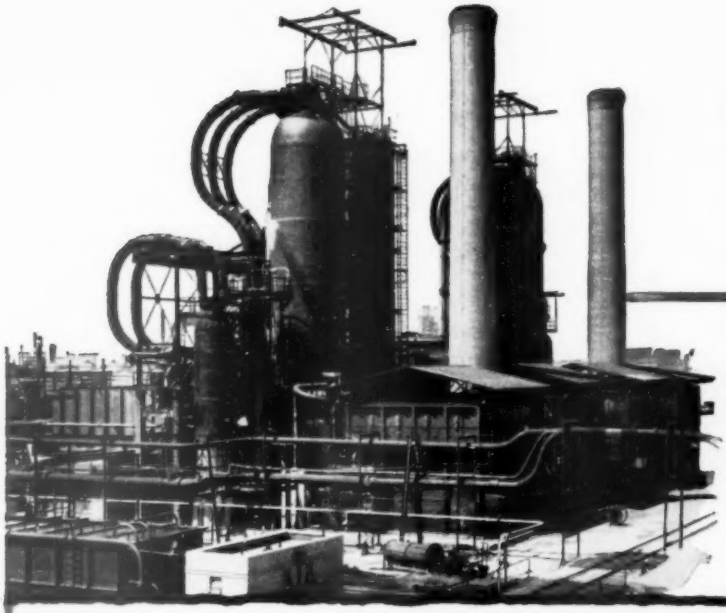
W. E. THOMAS, LLOYD J. OYE, G. L. C. DEHN, TOM KENT, W. H. T. CONNER, R. G. STROTHER, S. F. OLSON, F. B. STERN, JR., D. M. BUCY, I. W. HORTON, R. L. PRICE, J. D. VAN KIRK, B. E. CLARK.

Magnaflux Corp., developer of nondestructive test methods for metals, is featuring its new Magnaglo process for interior inspection of tubular products. Dry, fluorescent, magnetic powder is used in conjunction with suitable magnetizing equipment for Magnaglo inspection. When magnetized the powder particles line up on any discontinuity which produces a flux-leakage field. Viewed under "black-light," the glowing indications are very brilliant and quite easily detected. Corrosion-fatigue cracks in drill pipe and in sucker rods can be located by this fluorescent, magnetic-particle inspection method.

Magnet Cove Barium Corp.
Houston, Tex.
Block 11

Magcobar's exhibit includes its line of products for drilling operations. Included are:

Form-A-Plug, a time-setting clay cement which may be handled as a drilling fluid after initial mixing of the solid ingredients with water and may be pumped down the drill pipe and squeezed into lost-circulation zones.



Carey INSULATION is at work for GULF...

keeping process and steam lines operating at lowest cost

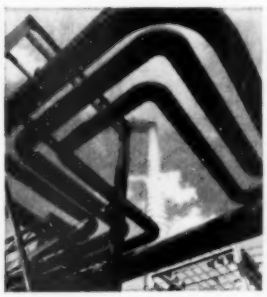
Refinery men demand *quality* insulation for processing operations. It's needed to keep fluids at constant temperatures. Helps cut fuel waste.

Since 1929, Carey insulation has been in continuous service at the Port Arthur, Texas plant of the Gulf Oil Corporation. Over the years, it has proven itself equal to the punishing strains of vibration and rapid expansion and contraction of equipment encountered in refinery operations . . . while guarding against heat loss, holding the line on costs!

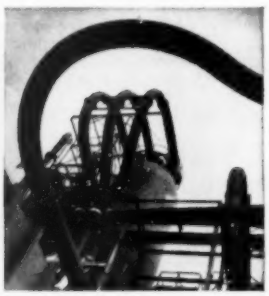
In *your* plant, you'll find dozens of applications where a Carey insulation material can conserve heat, save fuel. Carey's complete line of high and low temperature insulations includes blocks, blankets, pipe wrapping and jackets, cements and new Super-Light 85% magnesia in precision-sized blocks and nesting "O.D." pipe coverings that are easy and economical to apply.

Whether your problem is one of insulating "straight runs" or complicated shapes, a Carey Industrial Sales Engineer can show you why Carey insulation is best for the job. He'll gladly furnish you with complete technical and application data. No obligation to you. Telephone, wire or write our nearest office today.

Another Carey product—Careystone Corrugated Asbestos-Cement Roofing and Siding—protects Gulf Oil Corporation's warehouse at Port Arthur, Texas. This material is absolutely impervious to corrosion, rust, rot, decay; never requires painting or preservative treatment; is virtually maintenance-free!



"Worm's eye" view of live and exhaust steam lines insulated with Carey materials. Besides the usual hazards of expansion, contraction and vibration, this Carey installation stands up under the extremely hot, humid weather of the Gulf area.



Carey insulation materials have weathered 24 years of continuous service on the fractionating tower and vapor lines of these atmospheric and vacuum stills at Gulf Oil Corporation's Port Arthur, Texas plant.

Write Today for Your FREE Copy

of "Industrial Insulation." Tells all about Carey insulations, and how to select and use them. A copy is yours for the asking. Write Dept. OGJ-5

FROM THE HOUSE OF CAREY—

Industrial Insulations • Careystone Corrugated Roofing and Siding • Built-up Roofing • Careyduct • Asphalt Plank • Asphalt Paints and Coatings • Industrial Flooring • Other Famous Products for Industry Since 1873

Carey

The Philip Carey Mfg. Company, Lockland, Cincinnati 15, Ohio • In Canada: The Philip Carey Co., Ltd., 277 Duke St., Montreal 3, P. Q.

Leather-Floc, another lost-circulation material which is made up of tiny pliable and strong leather fibers. These fibers swell in water, forming an impermeable mat which resists passage of even clear water.

Alkatan, an alkaline-tannate material for chemical dispersion of drilling mud.

Q-X, a quebracho compound used for stabilizing and thinning drilling muds. Q-X is a dispersant for both low-pH and high-pH muds.

Emulsite, a ready-mixed alkali-tannathin mud conditioner for controlling viscosity and fluid loss of drilling muds. The material is readily soluble in water and can be added to the mud through the hopper or chemical treating tank.

Mud Fiber, a material used in restoring or preventing lost circulation, is a special blend of shredded cane and wood fibers designed to yield maximum sealing characteristics without impairing mud pumpability.

Leather-Floc, when mixed with other fibrous materials, is used in regaining circulation without impairing pumpability. It is prepared from leather which swells in water to form a thin, pliable, but impervious mat that clings closely to the contour of the formation.

Cell-O-Seal, a special crumpled flake cellophane material used in restoring or preventing lost circulation in unconsolidated formations. It can be used alone or mixed with fibrous materials without affecting pumpability.

Magco-Fiber, a blend of sized Douglas fir fibers and flakes designed to give maximum bridging and sealing characteristics for combating lost circulation.

Alkatan, a dispersing agent containing caustic and quebracho, for stabilizing drilling muds.

Lube-Kote, an especially prepared friction-reducing drilling mud graphite which improves lubricating properties of mud and coats metal surface with a protective film to resist wear and corrosion.

My-Lo-Jel Preservative, a bactericide used for preventing decomposition of starch and other organic materials in drilling muds.

Magneto Ignition Co., Inc.
Tulsa, Okla.
130-131 Kansas Building
In attendance

R. E. DAY, P. L. DAY, R. E. ROSS, M. O. SHOTWELL, O. O. MURRAY, CLYDE MORTON, G. L. BLAKE, R. S. STONAKER.

This firm, a service organization, is showing products of the various manufacturers it represents. Among these are: American Bosch Corp., Bendix-Scintilla, Bendix Products Division, The BG Corp., J. I. Case Co., Fairbanks, Morse & Co., The Lauson Co., The Stitt Ignition Co., and Wico Electric Co.

The devices displayed include diesel-fuel injectors, various magnetos, generators and regulators along with carburetors, spark plugs, air-cooled industrial engines and outboard motors.

Maloney-Crawford Tank & Manufacturing Co.
Tulsa, Okla.
116-117 Texas Building
In attendance

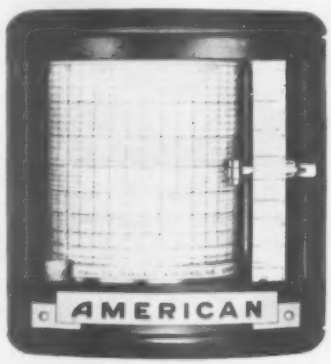
F. L. BRUCKNER, T. J. COSTELLO, W. H. FERGUSON, O. W. MALONEY, JR., A. I. SELLARS, S. A. WILSON, S. O. COOPER, H. N. ELSEY, MAX J. GREEN, C. E. HENDERSON, E. C. KOPP, LESTER MOORE, L. GLENN RADER, O. A. STEINER, L. O. WEAVER, T. Q. MAYES, GEORGE M. CHEATHAM.

A test horizontal separator made of plastic so that the flow of gases and liquids can be seen is featured at the Maloney-Crawford exhibit. The plastic shell of this model unit is an inch thick.

Also illustrated is the company's line of bolted steel tanks, welded steel tanks, emulsion treaters, dehydrators, and indirect heaters.

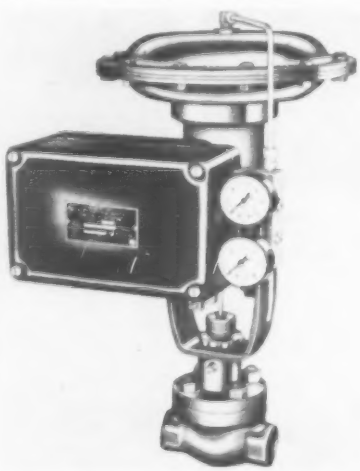
Manning, Maxwell & Moore, Inc.
Stratford, Conn.
229-230 Oklahoma Building
In attendance

HAMILTON MERRILL, CHESTER H. BUTTERFIELD, ALBERT W. COLEMAN, M. S. PALMER, GEORGE F. BRIGHT, JACK F. HIGGINS, CLIFFORD N. SUGDEN.



American electronic instrument recording controller.

A new electronic process-control system is being shown for the first time by Manning, Maxwell & Moore. This new "American" electronic process control system virtually eliminates "lag" in the transmission signal. Regardless of the distance from the process area, all controllers can be installed in the control room. The new instrument is manufactured for measuring and controlling temperature, pressure, differential pressure, liquid level, and flow. Manning, Maxwell & Moore has designed the new electronic system for utmost flexibility. Control components are completely standardized to permit interchange at the panel regardless of the type of variable under control. Other products exhibited by the company include "American" electronic transmitters of various types, "Ashcroft" pressure gages, "Hancock" valves, and "Consolidated" safety and relief valves.



American electronic instrument valve positioner.

Manton Gaulin Manufacturing Co., Inc.
Everett, Mass.
12-16 Kansas Building
In attendance

D. G. COLONY, GEORGE W. ELDRIDGE.
(See Specialty Sales & Service, Inc.)

Manzel, Inc.
Buffalo, N. Y.
50 Oklahoma Building
In attendance

HERB ROOSA, BOB MEYERS, JIM WESTPHALL, DON McCLELLAN, JOE MARZ, ED BROMILEY, RALPH NELSON, CARL GAST, LYNT SCHARFF.

Shown at this exhibit are working models of actual, engineered lubricating systems. In addition, Manzel, Inc., is presenting a new high-pressure lubricator suitable for service up to 25,000 psi. Also on display are various other lubricators and three chemical feeders incorporating automatic lubrication.

Steve C. Maples & Co.
Tulsa, Okla.
5-6 Scientific and Technical Building
In attendance

STEVE C. MAPLES, ROBERT A. MOORE, B. G. SHOOK, WALKER C. JACKSON, Steve C. Maples & Co.; R. J. DEMAISON and S.F. MURPHY, JR., Quigley Co., Inc., PAUL VANVALKENBURGH, Sarco Co.

This company is displaying products of manufacturers it represents. In this group are: Helicoid Gage Division of American Chain & Cable Co., pressure, vacuum, and other gages. Cheesman-Eliott Co., heat-resisting paints. Devices, Inc., Miracle surface anchors. Holmar Corp., water-tube boilers. Jari Products, Inc., power mowers, scythes and sprayers. Walter Kidde & Co., Inc., fire extinguishers. John C. Kupferle Foundry Co., fire hydrants. Madison Kipp Corp., lubricators. Miracle Adhesives Corp., adhesives and coatings. Sorco Co., Inc., steam traps, temperature controls, and strainers. Tempil Corp., devices for temperature determination. Quigley Co., Inc., cements, coatings, sealing compounds. Quigley Panel Constructions, Inc., precast refractory panels. Wheeling Corrugating Co., expanded-metal products.

Marathon Electric Manufacturing Corp.
Wausau, Wis.
76N North Area

This company, builder of a complete line of motors from 1/20 to 2,500 hp. plus a.c.-and-d.c. generators from ½ to 2,000 kw., is displaying its explosionproof and splashproof units for indoor and outdoor service. In addition, component parts of explosionproof motors are displayed.

Marathon engineers are available to explain their company's products.

Marley Co.
Kansas City, Mo.
78 Kansas Building
In attendance

ALLAN TALBOT, ROBERT B. BOWER, RICHARD J. POWELL, JAMES LARKEN, DAVID DWYER, W. O. KRETZMEIER, EARL R. ALLGEYER, HOWARD E. DEGLER, G. M. PRO, D. R. BAKER, E. P. HANSEN, JOE BEN DICKEY, JR., JOHN E. KING, R. P. HAHN, R. W. MAZE, E. B. REED, J. T. McKINLEY, J. H. BATEMAN,

EXPLORATION DEMANDS . . .

need modern tools . . .

Demands for ever increasing reserves won't permit the luxury of using obsolete tools. It's cheaper to throw them away than to continue to use them.

That's why more and more economy-conscious shot hole drillers are switching to Hawthorne "Blue Demon" Bits. They get cleaner, straighter hole faster, at lower production cost.

Custom-designed and engineered to drill 90% of all formations encountered in exploration drilling, "Blue Demon" drilling performance has no equal, regardless of price.

Set after set, box after box, you're getting drilling perfection with "Blue Demons."

Check your exploration costs regularly and cut them with "Blue Demons."

"U. S. PATENT 2,615,684 — OTHERS PENDING"

WRITE FOR ILLUSTRATED CATALOG

HERB J. HAWTHORNE INC.

P. O. BOX 7366, HOUSTON 8, TEXAS

You know you get more and faster footage for less when you buy "Blue Demons."

at the OIL SHOW

see

CARDWELL CLUTCHES IN

with more than

400,000

EQUAL TO 20
WITH NO

SEE CARDWELL'S FULL
FOR 2,000 TO 14,000-FT. DRILLING

CARDWELL MFG. CO.,

the FRICTION OPERATION ENGAGEMENTS

YEARS FIELD USE FAILURES

LINE OF DRAW WORKS
• WORKOVER RIGS TO ALL DEPTHS
INC. WICHITA, KANSAS

I.P.E. EXHIBIT DIRECTORY

M. A. PATTON, C. A. SMITH, JOSEPH J. PARKER, JR.

This company is featuring a scale model of its DriCooler, an air-cooled heat-exchanger unit. Technicians are available to discuss Marley's various products.

Marlow Pumps
Ridgewood, N. J.
99N, North Area and Block 208

In attendance

A. S. MARLOW, G. U. MILLER, J. B. DIEPENBROCK, W. A. VANBLARCOM, F. H. SPARKS, H. N. HAWES, D. A. OWENS.

This firm is exhibiting 10 pumps, 2 of which are operating to show the principle of the company's self-priming centrifugal units.

Marmon-Herrington Co., Inc.
Indianapolis, Ind.
Block W-1

In attendance

A. W. HERRINGTON, D. M. KLAUSMEYER, C. ALFRED CAMPBELL, E. F. RAY, CLIFTON T. ELLIS, G. H. FREERS, HAROLD BLANK, PAUL BLISS, FRED MYERS, HAROLD FISHER.

Manufacturers of multiple drives for Ford trucks and its own line of four-wheel and six-wheel-drive trucks, this company is exhibiting some of its latest models. A multiple-wheel-drive Ford is on demonstration service. Another Ford unit and one of the company's six-wheel jobs are being shown. Both of these units consist of cab and chassis only. In addition, cutaways show design of front end and transmission units for an "all-wheel-drive" truck.

Multiple-drive Ford in oil-field service.

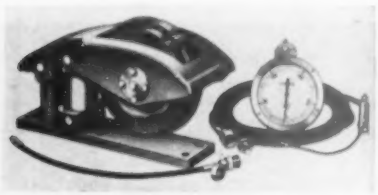
Marshall Supply & Equipment Co.
Tulsa, Okla.
93-94-95-96 Kansas Building

Martin-Decker Corp.
Long Beach, Calif.
Block 4

In attendance

E. L. DECKER, FRANK KELSO, JACK CLEMENS, MUTT DONOVAN, CARROLL KELSO.

Martin-Decker is showing its line of weight indicators, gages, and wire-line anchors. Working models of two types of weight indicator and anchors and its Hydro-Mech torque gage will be displayed. The torque gage is installed on some of the operating rigs of other exhibitors.



Martin-Decker Hydro-Mech torque gage.

A weight-indicator-wire-line combination is displayed which shows weight of the drill string directly in thousands of pounds, the pull on stuck pipe, plus tight-hole load when making trips. As a vernier weight indicator the unit is suitable for fishing, milling, cutting, etc., since variations as low as 25 lb. in 50,000 may be observed.

Shown for the first time is Martin-Decker's Ideal speed unit for selection of most efficient draw-works hoisting speed.

C. A. Mathey Machine Works, Inc.
Tulsa, Okla.
76 and 135 Oklahoma Building

In attendance

C. A. MATHEY, L. V. ORTON, DAN BRAND, SCOTTY LETCHER.

Exhibited are various Mathey products including pipe-cutting and beveling machines plus attachments along with well-measuring and gas-testing equipment.

Mayhew Supply Co., Inc.
Dallas, Tex.
Block 117

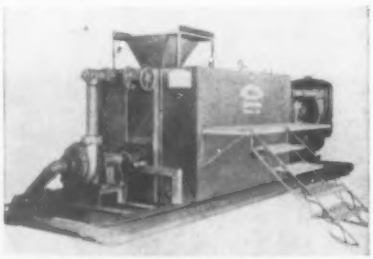
Mayhew is exhibiting its portable drilling rig designed for 4,000-ft. drilling or 7,000-ft. workover service. Mounting is on a tandem-axle, dual-wheel, semitrailer. Power input is through either a power takeoff or a torque converter. The 87-ft. mast is constructed of seamless-steel tubing, and is raised or lowered by means of two triple-telescoping hydraulic cylinders. The unit is designed so that three trucks can transport the rig and all necessary equipment.

Mayhew's Model 3000 unit for 4,000-ft. drilling or 7,000-ft. workover duty.

Medearis Oilwell Supply Corp.
Torrance, Calif.
Block 201

In attendance

PAUL A. MEDEARIS, V. H. ANDERSON, J. FRANK MEDEARIS, LEON LANDON.



Medearis Master mud mixer.

Medearis is exhibiting its Master mud mixer. This unit is powered by an International engine and is complete with centrifugal mud-transfer pump. A 60-in.-diameter, oscillating Bug Blower and a 10-in. mud-suction valve, both products of Medearis, are also displayed.

Meriam Instrument Co.
Cleveland, Ohio
20 Scientific and Technical Building

Meriam, manufacturer of manometers, flow meters, and various kinds of gages including draft, tank, and liquid-level types, is displaying its line of oil-industry products.

Metalab Equipment Corp.
Hicksville, L. I., N. Y.
15N North Area

In attendance

T. M. BEST, WAYNE A. REED.

The exhibit of this company features fume hoods, cabinets, and storage cases, plus a line of metal laboratory furniture and equipment for research and control laboratories. A new 180-page Laboratory Manual and Planning Guide is available at the exhibit.

Mexico Refractories Co.
Mexico, Mo.
Block 205

In attendance

E. C. TINSLEY, H. F. RANDOLPH, PAUL SITTON, JAMES BEEDIE, HARDIN KRITZ, D. A. SCHUTTE, C. N. EUBANK, J. T. SCHLANKER, K. S. PATTON, W. W. MILLER, SAM D. GROFF.

Company is featuring its Refract-O-Rite gun which is designed for pneumatic emplacement of its castable refractory products. This gun is new in the field of "shooting" materials in place rather than pouring or troweling.

Principal among the gun's features is that the correct amount of water is added in the mixing chamber, and the aggregates in the materials remain in proper balance and in suspension as the mixture is conveyed through the hose and sprayed, with controlled air velocity, to the target.

Another feature is finger-tip density control. Refractory materials may be applied with a dense, abrasion-resisting mass, or an open, porous-type, insulating body.

The display also contains Mex-R-Co castable refractory products, Furnas Crete, I-R-C, and I-R-C 20, for use with the Refract-O-Rite gun.

Mexico Refractories Co.'s Refract-O-Rite gun.

Mid-American Research Corp.
Wheatland, Pa.
NE of Cafeteria

For L-O-N-G-E-R THREAD LIFE

Use these famous Jimmie Gray Tool Joint and Drill Collar Compounds

You'll like this new Jimmie Gray Dope Brush, too!

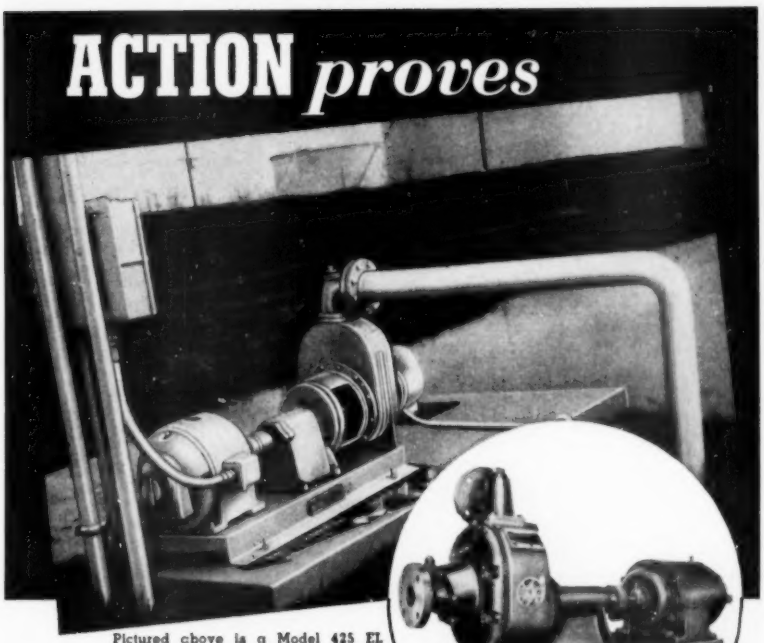
YES SIR—sold through your favorite supply store

PETROLEUM DISTRIBUTING COMPANY

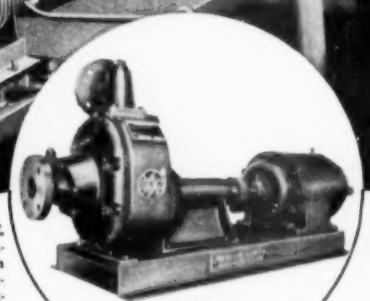
BOX 203 - HOUSTON, TEXAS - CHarter 5648

Quality Oil Field Lubricating Oils and Greases

ACTION *proves*



Pictured above is a Model 425 EL Marlow Pump funnelling surface drainage water to outside storm ditches on tank farm of major oil pipeline company on Gulf Coast of Texas. Accompanying this photo was the foreman's expressive testimonial — "These Marlows are doing a splendid job!



A 3" Marlow Self-Priming Centrifugal

MARLOW PUMPS

are specified and PREFERRED for DEPENDABLE performance

Disposing of surface drainage water in the field and around refineries are only one of many jobs given to Marlow Pumps to do. With the world's largest assortment of sizes and capacities available, veteran oilmen have become accustomed to specifying Marlow Self-Priming Centrifugal Pumps wherever dependable, maintenance-free operation is important. They prime automatically on suction lifts and will not vapor-lock. Marlow installations for handling water or petroleum products are increasingly frequent — and well justified — by their fine operating record and built-in quality construction.

For complete details and engineering solutions to your pumping problems, see your nearest Marlow dealer or write direct for the "Marlow Oil Country Bulletin."

You're invited to — **Booth 94N**

INTERNATIONAL PETROLEUM EXPOSITION, TULSA, OKLAHOMA

MARLOW PUMPS RIDGEWOOD, NEW JERSEY

Branch Plants: DeQueen, Arkansas · West Chicago, Illinois

266 Other factories in France and England. Distributors and Dealers everywhere

THE AXELSON IMPROVED STANDARD MODEL HYDRAULIC LONG STROKE PUMPING UNIT IS PAYING OFF!

HERE'S WHY:

1. INCREASED STROKE LENGTH
Overcomes stroke loss due to rod and tubing stretch.

2. FEWER STROKE CYCLES PER MINUTE
Pumping equipment lasts longer with reduced cycle rates.

3. MORE PRODUCTION WITH GREATLY REDUCED ROD TROUBLE
Application of hydraulic power through centrifugal pump eliminates build up of excessive pressures at the polished rod.

4. LESS DOWN TIME
Unit is designed for simplicity of operation and is ruggedly constructed throughout.

An Axelson engineer is at your service for discussion of any specific pumping problem — no obligation, of course.

AXELSON

MANUFACTURING COMPANY
Division of Pressed Steel Car Company, Inc.
6160 South Boyle Avenue
P. O. Box No. 15335
Los Angeles 58, Calif.

LS-15

Mid-Continent Petroleum Corp.
Tulsa, Okla.
46-47 and 58-59 Kansas Building

In attendance

M. O. HARDY, R. J. RICE, J. J. BURKE, RALPH MYERS, K. O. YEAGER, MELVIN PRESTON, PAUL E. YARD, J. E. SMITH, WINIFRED COOK, L. O. BIDDLE.

Mid-Continent has an institutional-type display, designed to remind oil men of the "Old Times" in the petroleum industry. Various refining, production, pipe-line, transportation, and marketing scenes show the company's scope of operation in supplying its products through the Midwest.

Mid-Continent Supply Co., Inc.
Fort Worth, Tex.
Block 3

In attendance

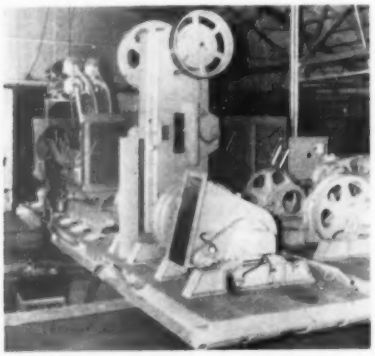
K. W. DAVIS, D. H. THORNBURY, J. A. DAUGHERTY, F. JOHN, N. E. BARBER, M. C. CORNISH, T. P. TARWATER, P. Z. HILLIARD, M. F. CRIBBS, T. M. CONE, R. M. FLIPPO, VICTOR LEMAY, R. E. ELMORE, G. L. HUESTIS, D. L. JOHNSTON, G. A. METZ, R. F. MUENSTER, W. D. POTEET, L. B. LEVELL, J. H. KENYON, W. G. SKINNER, J. M. HARRIS, JR., E. E. CAMPBELL, BRYANT TRENARY, W. W. ARNOLD, S. C. CLINKSCALES, C. M. FLEEMAN, R. L. HARRIS, A. T. SKAER, W. I. WEST, T. N. SHULTS, J. P. ALEXANDER, G. B. BLAIR, W. M. DAY, J. W. EASTHAM, B. S. HARKRIDER, C. H. HICKMAN, J. H. MACKEY, L. T. RATLIFF, D. S. SMITH, G. A. WEAD, J. T. CALNON, J. L. PEELER, L. J. TROUTZ, H. H. HOPE, R. J. ARROYO, E. W. CRAFT, H. DAVIS, G. E. GRIMM, R. E. RUTH, C. E. TROUTZ, JIM VAN DYKE, A. C. ZUGAR, J. J. MEDLIN, R. G. BARNES, E. F. DAVIS, G. M. JACKSON, P. M. MYERS, O. E. FARLEY, H. D. POWELL, W. N. EASON.

Mid-Continent Supply is displaying products of nearly 100 manufacturers. Among the larger items displayed is a new swinging-compound rig drive with three large gas engines of different manufacture. The fourth position on the four-runner skid in the four-engine rig drive is left bare to show construction. The swinging compounds are arranged to permit movement of the four-engine rig drive in four highway packages, of legal sizes, without breaking chain or chain guard. Another Mid-Continent display is a Cummins multiple-engine rig drive with six engines.

Four Emsco pumps, featuring the eccentric-type power end with herringbone gears and all-steel construction are displayed with various rigs. Mid-Continent's swinging, final drive is shown with a Unit Rig draw works and rig drive.

In the heavier-equipment field, Mid-Continent is also showing a new Regan 160-ton traveling block with four 36-in. sheaves direct connected to the new Byron Jackson "150" hook. A cutaway model is displayed to show method of mounting and lubricating Regan crown and traveling block sheave bearings.

All of Mid-Continent's large equipment is supporting its huge exhibit of smaller equipment for the oil industry.



Mid-Continent's swinging compound.

Middle West Coating & Supply
Tulsa, Okla.
28N North Area

In attendance

MAYNARD JACKSON, BOB NEE, PHIL MEYER.

This exhibit includes a line of coating materials and equipment for combating corrosion. Application of the entire line handled by Middle West Coating & Supply is illustrated. The products find use in various segments of petroleum operations.

Midland Supply Co., Inc.
Wichita, Kans.
69N North Area

Mid-State Chemical Co., Inc.
Mt. Vernon, Ill.
6 California Building

In attendance

W. B. PORTER, MACK DUNCAN, NANCY W. DUNCAN, ROLAND DAVENPORT, CARLETON PARKE, C. P. CUMMINGS, O. C. HELVEY, JOHN LELAND, HOWARD CRIDER, JOHN REAVIS.

Solvents, paints, and industrial enamels for oil-industry application are being exhibited by Mid-State. One of the solvents being shown is used in production and other field operations for dissolving paraffin. Another solvent has application in dissolving various precipitates and for combating hydrogen sulfide in producing and similar petroleum operations. A third solvent for removing paint, varnish, and enamel from metal surfaces and for cleaning brushes is also being shown.

Mid-States' display of paints includes heat-resistant aluminum, ready-mixed rust inhibitor, and industrial enamels.

Midwestern Engine & Equipment Co., Inc.
Tulsa, Okla.
Block 123

Midwestern is showing a variety of equipment. Included are a Trenchoe, plus a Tractair with a Patch Drill, an Oliver unit with a Berg side boom, and a Le Roi-Cleveland Pipeliner Special drill, along with a 600-cu. ft. Le Roi compressor.

Also displayed is an oil-field-type duplex power-pump unit comprised of a Gardner-Denver pump and Continental engine plus a Midwestern - Engineered - Beacon light plant and a Unit Crane & Shovel cutaway display gear case. In addition is a Hydrolift, plus a Chinook-Wind space heater and Midwestern's Water-Hog pump.

Lines of pipe-wrapping supplies are also shown and demonstrations are made on various heavy-equipment items.

Midwestern Geophysical Laboratory
Tulsa, Okla.
Block 5

In attendance

M. E. MORROW, E. J. HANDLEY, R. D. ATCHLEY, D. G. O'BRIEN, G. R. MORROW, A. E. McCOY, Midwestern Geophysical Laboratory; HAROLD LOONEY, JAMES LOONEY, Looney's Sheet Metal Works.

Midwestern is showing both geophysical and industrial equipment. The geophysical display consists of an instrument truck, shooting truck, and dynamite magazine, which have been especially constructed for this exhibit. This equipment is codisplayed by Midwestern and Looney's Sheet Metal Works. Midwestern is also displaying portable reflection seismograph equipment, oscillographs, and galvanometers, especially designed for the geophysical industry plus geophones and geophysical cables.

In addition, Midwestern's new line of hydraulic servo-mechanism components for industrial and oil-field equipment will be displayed. This type of mechanism has application in the oil-well servicing field and in drilling equipment for pressure control and control of motion of either a rotary or translatory nature.

Mid-Western Industries, Inc.
Wichita, Kans.
Block 203

(See Earth Equipment Corp. exhibit).

Milton Roy Co.
Philadelphia, Pa.
23-24 Kansas Building

Mine Safety Appliances Co.
Pittsburgh, Pa.
48-49 Oklahoma Building

In attendance

J. B. DAVIES, H. W. RICHARDS, E. C. HANSEN, J. E. BOWLIN, J. T. WILLIAMS, G. J. GRUBER, W. H. GATES, J. W. MEEHAN.

A wide variety of safety equipment, gas-detecting instruments, and material, including not only established products used in the petroleum industry but also new ones, are being exhibited by Mine Safety Appliances Co.

Among the instruments featured is the company's aromatic hydrocarbon detector, a compact portable unit for fast, precise determinations of benzene, toluene, and xylene. A new Explosimeter is also featured. This simplified portable, combustible-gas indicator was especially developed for testing leaded gasoline. Also shown are protective hats, including the Skullgard and the new colored glass-fiber hats.

Mine Safety Appliances' aromatic hydrocarbon detector.

Minneapolis-Honeywell Regulator Co.
Philadelphia, Pa.
41-43 Scientific and Technical Building

In attendance

L. MORTON MORLEY, C. L. PETERSON, O. B. WILSON, K. R. KNOBLAUCH,

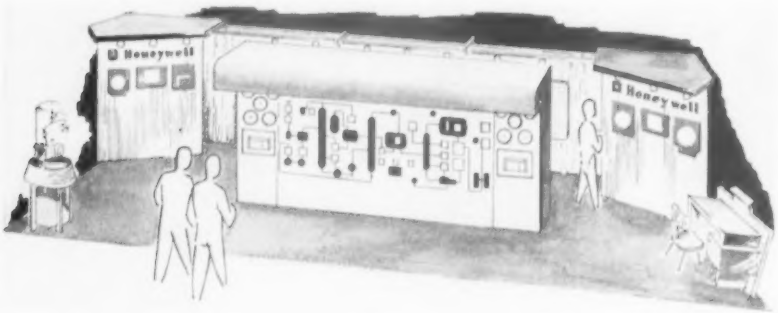
I.P.E. EXHIBIT DIRECTORY

J. A. ROBINSON, R. A. SCHLEGEL, R. L. MALLORY.

Theme of the Honeywell Industrial Division exhibit is "Instrumentation Unlimited . . . for the Petroleum Industry." Highlighting the display is a full-size, completely wired and piped graphic panel, designed and built for Sinclair Refining Co. for a new propane recovery unit at Marcus Hook.

Six conventional-size instruments are being displayed in addition to the panel board. These instruments include strip-chart recorders, circular chart recording controllers, and the Precision Indicator. A recording flow meter is also shown along with a single-pilot, dual controller.

A high-speed strip-chart recorder is also being shown. Full-scale pen speed of this instrument is the extremely short time of ½ second. A two-pen strip chart recorder of the type used for well logging may also be seen.



Mission Manufacturing Co.
Houston, Tex.
91-93 Texas Building

In attendance

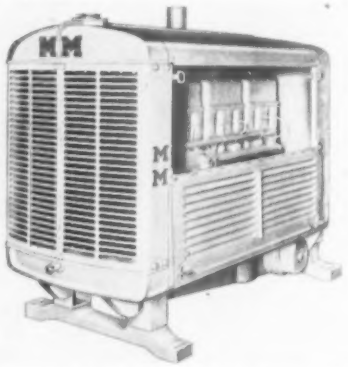
DUDLEY SHARP, W. T. CAMPBELL, SHAD MIMMS, JACK STEWART, TED FULLINWIDER, BEN YOUNG, MILLER SPARKS, MORTON KING, CALVIN BELL, JACK HARDY, JACK BROWN, BOB WOODS, BUDDY HEBERT, COBB TURNER, C. W. FRYAR, J. E. YOUNG, JOE SCALISE, JOHN BROWN, A. E. HIGGINBOTHAM.

Mission's exhibit features a number of recently developed products which include the E-Z swab and Satin Finish liners, plus split-type, self-sealing grand packings, and a slush-pump upper-valve spring. In addition to these new products a complete line of Mission equipment will be on display, including Silver Top and Super Service valves, along with piston rods and rolling-dog slips. Also displayed is Mission's line of centrifugal pumps and automatic, lubricated-plug valves.

Minneapolis-Moline Co.
Minneapolis, Minn.
Adjacent Scientific and Technical Building

In attendance

E. A. HENRY, E. R. RAVELING, REX JIEDE, GEORGE BALCH, BEN VAN ZEE, W. E. SWENSON, W. A. ANDERSON, Minneapolis-Moline Co., and D. J. SHRIMPTON, R. H. WOODWARD, JR., W. E. HANSEN, B. P. GOAN, Shrimpton Manufacturing & Supply Co.



Minneapolis-Moline's new oil-field power unit.

This company is featuring its new oil-field power unit. The exhibit is handled by Shrimpton Manufacturing & Supply Co., Minneapolis-Moline oil-field distributor serving Mid-Continent and West Coast areas. Other displays are a cutaway oil-field engine and presentation of standardized parts design. All models set up to run.

Moran Furnace & Sheet Metal Co.
Tulsa, Okla.
E. of Kansas Building

Morrison Brothers Co.
Dubuque, Iowa
58 California Building

This company is displaying its line of safety and saving appliances for the handling of petroleum products. Samples of escapement valves for storage tanks ranging in size from 2 in. up to 20½ in. along with a line of emergency valves ranging in size from ¾ in. by 1 in., to 8 in. by 12 in., plus company's latest safety vent for cutting down the loss on regular 300-gal. farm storage tanks, are being shown.

Morrow Engineering Specialty Co.
Tulsa, Okla.
223 Oklahoma Building

John Bean high-pressure industrial pumps and Hapman tubular conveyors are the main items displayed at this exhibit. Also shown is a line of small capacity, high-pressure, horizontal, enclosed, triplex pumps, including piston-cup units with baked porcelain-lined cylinders and straight plunger pumps. A line of high-pressure spray nozzles and other accessory equipment plus cutaway pump models in operation are being shown. A display model of Hapman Conveyor, Inc.'s, product is shown.

Motorola, Inc. (Communications and Electronics Division)
Chicago, Ill.
32 Silver Lane

Lighter . . . TOUGHER

COFFING CHALLENGER SPUR-GEAR HOIST

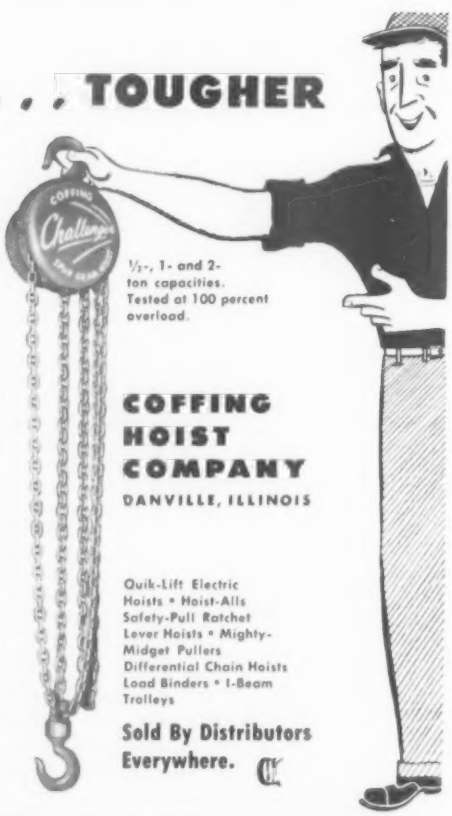
Never before such easy portability and rugged, shock-resisting strength in a spur-gear hoist . . . never such simplicity of design and ease of servicing.

Light weight—carry it in one hand; set it up anywhere. One-ton model weighs only 39½ lbs.

All Steel—even the housing. Takes shock loads and impact as only steel can.

Easy to Service—may be completely disassembled in minutes with ordinary tools. Simplest spur-gear hoist ever built.

Find out how this better spur-gear hoist can improve operations and save expense for you. Write for bulletin F5C.



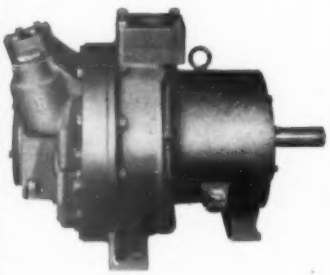
½-, 1- and 2-ton capacities. Tested at 100 percent overload.

COFFING HOIST COMPANY
DANVILLE, ILLINOIS

Quik-Lift Electric Hoists • Hoist-Alls
Safety-Pull Ratchet Lever Hoists • Mighty-Midget Pullers
Differential Chain Hoists
Load Binders • I-Beam Trolleys

Sold By Distributors Everywhere.

For
QUALITY
Specify
PYLE-NATIONAL
Turbines
1/4 to 120 h.p.



The Pyle-National line of highly efficient impulse type turbines is ideal for prime movers and standby drives on pumps, generators and other equipment in refineries . . . also for drilling site equipment such as shale shakers, pumps, bug blowers, generators, etc.

Since 1897 Pyle-National has manufactured their turbines entirely within their own plant . . . thus assuring positive control of quality and workmanship through all stages of production . . . from raw material to the final testing.

SEND NOW FOR BULLETINS

containing complete information on these small and medium capacity turbines.

TURBO-GENERATORS

Also available is bulletin on Pyle-National turbo-generators (500 to 15000 watts).

The Pyle-National Company

1391 North Kostner Avenue
Chicago 51

EXPLOSION PROOF FITTINGS
•
FLOODLIGHTS

SINCE 1897

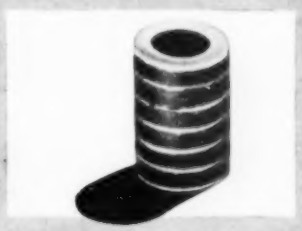
CHEMISEAL
the packing no petroleum chemical can attack . . .

Attention—pump and valve builders and users! End troublesome packing problems for good, with Chemiseal (made of TEFLON*) Packing.

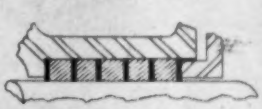
Chemically inert, there is no need to change packing for different crudes or operating conditions.

Chemiseal is also highly resistant to abrasion, is serviceable from —110°F. to 500°F., stands up where other packings fail rapidly.

Chemiseal Valve Packing No. 810-V provides necessary seal at low gland pressure, reducing torque required to operate valve. Supplied in quantity or in sets with square-end Teflon adaptors. Write for catalogs Nos. 711 and 810-V.



Chemiseal Pump Packing No. 711, for rotating or reciprocating shafts, provides a low-friction, 2-way seal that not only prevents axial seepage, but seals against shaft and stuffing box as well. Sets supplied for specific requirements.



UNITED STATES GASKET COMPANY

FLUOROCARBON PRODUCTS DIVISION
FABRICATORS OF "TEFLON", "KEL-F" AND OTHER FLUOROCARBON PLASTICS
CAMDEN 1, NEW JERSEY

*duPont's trademark for its tetrafluoroethylene resin

See us at the
Oil Show
West End, Section 203

Fingertip heat control

right at the work-with the P&H Welding Twins

equipped with Dial-lectric Control

Dial-lectric Control is an exclusive P&H feature that helps you weld faster, easier, better — at less cost!

P&H AC WELDER

As easy as tuning your radio — just turn the radio-type knob of the Dial-lectric Instantaneous Remote Control (or step on a foot treadle), to adjust heat accurately. Easy, quick-start arc. No hard-working cranks to turn. No moving parts to cause delays or maintenance expense. Sizes up to 625 amps., NEMA rated. Connectable to 220 and 440 volts.

P&H DC RECTIFIER WELDER

Also equipped with hand-or foot-operated Dial-lectric Control, to give the welder fingertip heat control at the work. No hard-working cranks to turn. No moving parts to wear out. Saves on power costs under load — and during idle and no-load periods. Protects the primary input line against unbalanced conditions. Three sizes, 260, 300, and 500 amps., NEMA rated.

P&H WELDING DIVISION
HARNISCHFEGER CORPORATION
4527 WEST NATIONAL AVENUE • MILWAUKEE 46, WISCONSIN

the P&H *Line*

2404

P&H

Welding Equipment

speeds production schedules, cuts costs

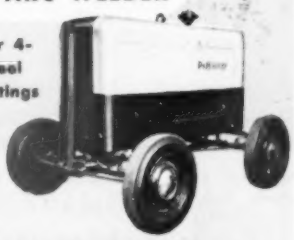
P&H LOW-HYDROGEN ELECTRODES

13 types for high-strength welds on problem steels, steel castings, nickel-alloy steels, chrome-moly steels, .40 carbon castings, high-hardenable steels, aircraft and similar steels.

P&H POSITIONERS

Position heavy weldments for economical down-hand welding. Complete range of sizes to handle work from 2500 to 36,000 lbs. — remote-control and hand-operated models.

P&H WN-301
Engine-Driven
DC ARC WELDER



2- or 4-Wheel Mountings

Portable. Equipped with Dial-electric Control, for fingertip heat control at the work — gives you faster, better welding. Runs at only 1750 rpm. Welding service range, 60-375 amps, NEMA rated.

Ask your P&H representative or distributor for complete information, or write for free bulletins.

P&H WELDING DIVISION
HARNISCHFEGER CORPORATION
4527 W. National Ave., Milwaukee 46, Wis.
2494A

I.P.E. EXHIBIT DIRECTORY

Lee C. Moore Corp.
Tulsa, Okla.
65-66 Oklahoma Building
In attendance

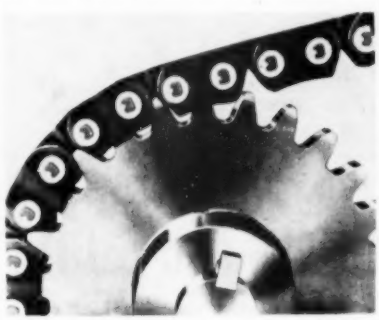
H. J. WOOLSLAYER, O. H. DITTMER, DON TODD, G. A. HOLLAWAY, J. Y. WEATHERLY, J. R. ROSS, W. I. SALMIKOV, J. R. ROBERTS, CECIL HAYES, J. R. BECHTOLD, A. B. DUNHAM, HOWARD ELLIG, J. E. HARRELL, FRANK BOWDLE, G. I. LYNCH.

In addition to Lee C. Moore's display of working models of its various masts, full-scale units are installed at the exhibits of Bethlehem Supply Co. and National Supply Co.

Morse Chain Co.
Detroit, Mich.
15-16 Silver Lane
In attendance

R. J. KOCH, H. W. TULLY, C. R. BECKER, I. A. HORTON, R. J. HOWISON, J. A. LANGAN, N. C. BREMER, L. P. SMITH.

Morse Chain Co., manufacturer of mechanical power-transmission products, is displaying its entire line of chain drives, couplings, and clutches. Featured is a drive unit, 1½-in. pitch by 2-in. wide, with a capacity of 290 hp., actually running at a linear velocity of over 1 mile per minute. This drive is on



New Morse Hy-Vo drive. Sprocket teeth are involute in contour.

mud pump and drilling rigs, and similar applications.

Also on display is the Morse standard line of A.S.A. roller chain, "Rocker Joint" silent chain, Morflex flexible couplings and drive shafts and friction clutches.

Morse Hy-Vo drives are included in the displays of various other exhibitors. The drives are incorporated in the displays of both engine and drilling equipment transmissions.

Mountain Iron & Supply Co.
Wichita, Kans.
79-80 Kansas Building

An unusual display of an actual-working, scale-model rotary drilling rig is at this exhibit location.

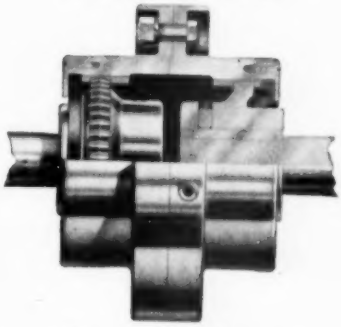
The rig is an exact replica of the 6,000-ft. rig and Lee C. Moore jackknife derrick operated by Empire Drilling Co. It is complete with company cars, pipe loaded trucks, cement sacks, and is manned by a full drilling crew. The derrick stands about 24 in. high and the entire unit is lighted for night operation by tiny light bulbs.

Mountain Iron's exhibit area is being used strictly as a service center for visitors. A courtesy telephone, where calls can be made or messages left with an attendant, is installed and facilities for resting are provided.

see

THE NEW AJAX

DIHEDRAL *flexible* COUPLING



in Action AT TULSA SHOW

● Get rid of your misalignment troubles. This new Ajax Dihedral Coupling handles misalignment heretofore considered excessive. Backlash held to lubrication film requirements. Standard teeth handle misalignment up to 4 degrees. Teeth to handle greater misalignment on special order.

Completely enclosed with lubrication sealed in. All gear teeth hardened to 50-55 Rockwell C.

See them in operation at the Show in our Booth in block 208 in the new north section.

AJAX
FLEXIBLE COUPLING CO., INC.
Westfield, N. Y.

I.P.E. EXHIBIT DIRECTORY

Mud Control Laboratories, Inc.
Oklahoma City, Okla.
34 Silver Lane
In attendance
J. E. RAWLS, HOMER B. BROWN, JR., LYNN CRIDER, R. E. DAVIS, VIC DAVIS, LOYD LUNDY, H. E. MALLORY, P. A. McCORD, RUSTY SAUNDERS, A. G. SCHUESSLER, FOY SMITH, W. C. SUMMY, JR.

Along with a display of its services available to the drilling industry, Mud Control Laboratories is maintaining at its exhibit, personnel for technical discussions on its products. Featured is the company's portable laboratory.

A complete line of materials for field preparation of drilling fluids and all chemicals which may be required in the treatment of such systems for development and control of desired characteristics, is supplied to the industry by Mud Control Laboratories, Inc.

Mud Products, Inc.
Tulsa, Okla.
Block 115
In attendance
E. R. ALBERT, JR., BEN R. BOURLAND, J. B. HARLOW, R. D. BAKER, R. E. HANNA, S. E. SCHULTZ, RALPH NATION, RALPH ADAMS, ROY MITCHELL, WARREN ASHWILL, O. A. PONDER, CLAUDE WILLIAMS, GEORGE WARREN, M. W. CROSLEY, HAROLD EUBANK, R. R. STREETMAN, Mud Products, Inc.; WARREN MILLER, R. J. REED, V. S. KELLER, P. J. POWELL, KEMPER E. HIPPLE, BOB SNYDER, HAROLD TOMLIN, Bomud Co.; W. W. CARSON, CHARLES STEPHENS, CALVIN ORTEGO, P. J. LA TOUR, CLIF MOORE, E. C. SMITHERS, W. R. ZIMMERMAN, CARL BRAZELL, Beaumont Cement Sales Co.

Mud Products, Inc., and its associate companies, Bomud Co. and Beaumont Cement Sales Co., have in actual operation a complete drilling-mud system. Mud is mixed, circulated, and treated as for an actual well operation. The system is composed of two steel mud tanks complete with O-ring butterfly valves installed on a Goulds centrifugal pump.

Muldrow Aerial Surveys Corp.
Oklahoma City, Okla.
60N North Area

Mundet Cork Corp.
North Burgen, N. J.
123 Kansas Building
In attendance
H. H. BRUNS, JOHN HIGH, B. BOTTER, A. A. STONE, O. SHEPARD.

A line of industrial insulation for both high and low-temperature service is exhibited by Mundet Cork Corp. Included is 85 per cent magnesia pipe coverings and blocks, plus cork, pipe covering along with Jointite corkboard.

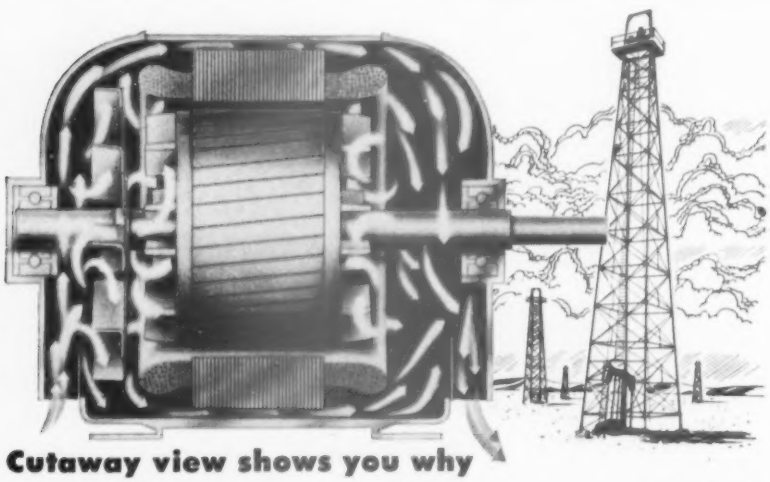
Murdock Tank & Manufacturing Co.
Tulsa, Okla.
Block 105
In attendance
F. L. MURDOCK, E. R. WILLIAMS, OSCAR L. GRIMES, CHARLES E. LEWIS, J. F. RONE, P. W. McKEE.

This company is showing its all-plastic bolted storage tanks. Made from polyester-resin-impregnated glass-fiber mats, the tanks are designed for corrosive service. All dimensions of the tanks, except thickness, conform to A.P.I. requirements.

Murdock Tank & Manufacturing Co.'s all-plastic tank.

Murphy Diesel Co.
Milwaukee, Wis.
Ramp West of Block Q
In attendance
PAUL SCHENTZKY, R. L. JEFFERIES

A new building houses Murphy's engine exhibit. Highlighted are six of the company's diesel units. Cutaways of some of the engines are on display to illustrate various design features including unit fuel injection along with four valves per cylinder and plain open combustion chambers. In addition these cutaways permit inspection of hydraulic, servo-type governors and interlocking connecting rods. The walls of Murphy's new exhibit building are used to display photographs of typical Murphy-powered installations in various oil-industry operations.



Cutaway view shows you why

R&M Oil Country Motors run COOL!

"Clean-sweep" ventilation insures longer motor life

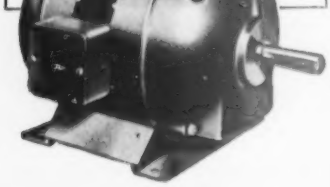
There's an R&M "All-Weather" motor that's built for YOUR job!

Triple-Rated—for changing power needs. Slight additional cost is quickly written off by power savings. You buy power only for the connected horsepower you need. As requirements change, you change the horsepower—*without changing motors.*

High Slip—ideal for the reciprocating load requirements of oil pumping.

High Torque—to meet heavy starting problems.

Standard Integrals—from 1 to 125 horsepower.



...and greater stamina for overloads

Cool running—hour after hour at full capacity—is one of the big reasons why so many oil field men swear by R & M "All-Weather" Motors. These motors are designed to permit ample circulation of high velocity air—to carry off motor heat, as well as heat developed by exposure to the hot sun. And, openings are drip-proof, rain-proof; screened to keep rodents out. Special treatment inside and out resists rust and corrosion. Heavy duty bearings are sealed to retain lubricant. In short, here are motors that will give you years of faithful service.

It will pay you to get the whole story!

Write today for name of your nearest R & M distributor. He can prove—in dollars and cents—that all these "extras" in R & M motors are furnished *at a standard motor price!* Be sure to ask for R & M bulletin on oil field motors; it's packed with good, usable information.

R&M "All-Weather" Oil Country MOTORS

ROBBINS & MYERS, INC.
Springfield 103, Ohio • Brantford, Ontario

"All-Weather" is the trademark of Robbins & Myers, Inc.

Kennametal Light-Weight Titanium-Carbide* Balls minimize down-the-hole check valve troubles caused by ball flutter, cage wear, and fluid pounding. Their shock- and wear-resistance is almost equal to that of regular Kennametal, assuring long service in pumping fluids with sand, water, sour crudes, hydrogen sulphide gases. Costly string pulling is less frequent—and production is increased.

Kennametal API Titanium-Carbide Balls are stocked and sold by your regular supplier. Kennametal Inc., Latrobe, Pa.

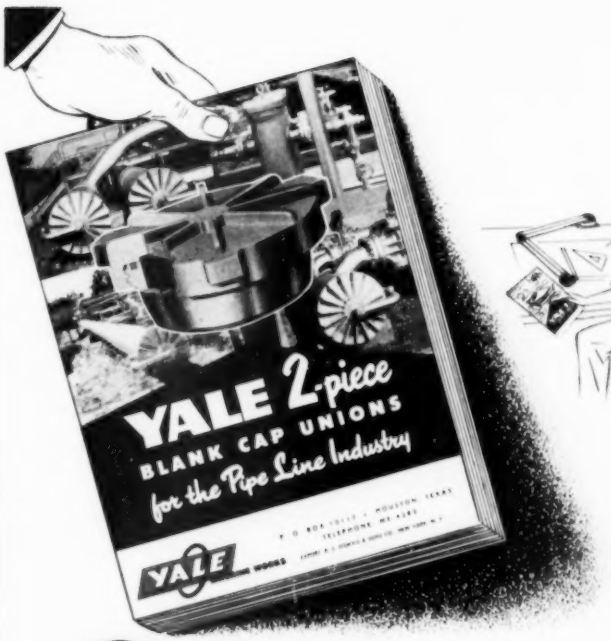
Called Kentanium

KENNAMETAL Balls and Seats

Shock- and wear-resistant Kennametal Balls and Seats are furnished in matched sets. Balls available in either light-weight Titanium-Carbide or regular Kennametal Tungsten Carbide. Seats are Tungsten Carbide.

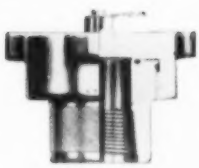
KENNAMETAL

PUTS AN END TO DOWN-THE-HOLE CHECK VALVE TROUBLE



Preferred BY ENGINEERING

Engineers like to specify equipment that will do its job without fuss or bother . . . equipment that will *give service* and *stay in service* with a minimum of attention. In unions, they like a secure pressure seal, ease of handling and freedom from installation problems. Above all, they like a piece of equipment which, through its modern design, actually does a better job at lower cost.



These are the reasons so many pipe line engineers the world over are specifying "YALE UNIONS" in their specifications of new construction. Complete information on these preferred unions will be sent upon request.

WHEN YOU'RE AT THE OIL SHOW, WE INVITE YOU TO VISIT BOOTH NO. 95-N, NORTH EXTENSION

YALE MACHINE WORKS

P. O. BOX 10117
TELEPHONE ME 4282
HOUSTON, TEXAS

ALMOST AS EASY AS OPENING A DOOR

most widely imitated Rotary Hose in the oil fields

Thermoid

POWERFLEX

Rotary Hose & Discharge Units

premium quality at regular price!

- Oil and abrasion resistant synthetic tube.
- Impregnated multi-ply woven fabric body.
- High tensile steel cable reinforcement.
- Patented full-flow couplings securely anchored to each individual cable—positively cannot blow off.
- Tough, extra-heavy, weather and abrasion resistant cover.
- Coupling guaranteed leak-proof for hose life.

Each length pre-tested to 5000 psi before shipment.

Exceeds all A.P.I. requirements for Grade C Hose.

Available in all standard sizes and lengths. Get Powerflex from your supply house or the nearest Thermoid warehouse.

Thermoid Industrial Rubber Products — Quality Value Service

Mid-continent Office and Warehouse: Houston, Texas
California Office and Warehouse: Los Angeles, California

SEE OUR CATALOG IN THE COMPOSITE CATALOG

See Us at TULSA

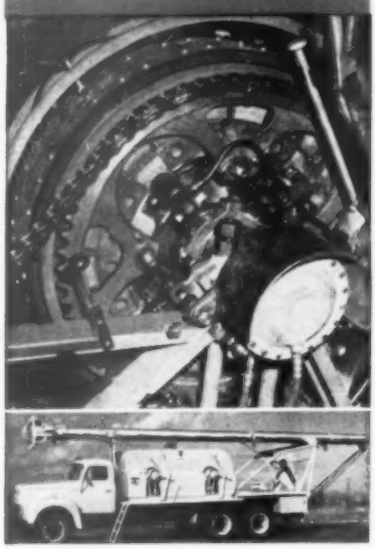
Powerflex Rotary Hose • Trioflex Slim-Hole Rotary Hose • Mud-Flo Slush Pump Hose • Flexible Discharge Units • F.H.P. and Multiple V-Belts • Oil Country Flat Belting

Thermoid

Wire Line Turn Backs • No-Wip Line Savers • Stuffing Box Rings • All Types of Hose • Molded Specialties • Brake Blocks

Thermoid Company • Offices & Factories: Trenton, N. J., Nephi, Utah

FRANKS MFG. CORP.
TULSA, OKLAHOMA
World's leading builders of portable rigs specify
Thermoid
brake blocks



Franks' truck mounted rigs and service units cruise the oil fronts in all corners of the world. Their power plants pull the heaviest load of tubing or rods, rig up or down with swift efficiency, and speed out of the hole with 13,000 ft. or more of swab line.

There's no place in Franks' performance for anything but the best. Thermoid Brake Blocks are used on all Franks' units, to hold safely and surely while Franks' famous Power Take Off delivers full engine power to the Hoist.

Thermoid Brake Blocks are made with highly developed friction compounds to meet the most exacting standards.

On the equipment you manufacture or service, it will pay you to specify Thermoid. Get full information on how Thermoid Friction Materials and specialized service can assure you greater economy and efficiency.

Mid-continent Offices and Warehouse, Houston, Tex.

Thermoid

Thermoid Company, Trenton, N. J.

I.P.E. EXHIBIT DIRECTORY

Frank W. Murphy, Manufacturer
Tulsa, Okla.
26 California Building
In attendance
FRANK W. MURPHY, GORDON SCHAPAUGH, W. W. GRIGG, ART MURPHY, JACK WYATT.

A new Murphy safety switch for electric-motor power pumps and compressors is being displayed at this exhibit. The new switch combines both high-pressure and low-pressure shutdown features. Its visible contacts can be adjusted through 60 per cent of scale range on either high or low pressure. An automatic natural-gas fuel shutoff switch which operates on current of primary winding in magneto is also shown.

In addition, a complete line of pipe-line pump pressure and vacuum controls including models for pumps and compressors powered by gas engines or electric motors, is being exhibited. Murphy safety switches are in operation on equipment displayed by more than 20 other exhibitors.

New Murphy safety switch.

National Bank of Tulsa
Tulsa, Okla.
Block H
In attendance
W. A. BROWNLEE, D. CLAYTON ARNOLD, R. M. MOODY, FALKNER C. BROACH, N. D. NEWBURY, C. T. EVERETT, R. E. SHEPPARD, WALTER J. EYESTONE, FRANK M. SOWLE, P. D. HAYES, E. L. STUCKER, MARVIN MILLARD, L. HAROLD WRIGHT, O. R. BUTTRAM, EARL BEARD, W. L. McDONALD, L. M. COATES, G. E. PUTNAM, J. RAYMOND COBB, C. C. SIMPSON, P. J. TEICHMANN, JAMES E. BUSH.

National Bank of Tulsa is maintaining an air-conditioned "glass house" where visitors may view television, write letters, telephone or just relax.

National Lead Co.
New York, N. Y.
18-19 Scientific and Technical Building
In attendance
GEORGE OWEN, L. R. TOMA, C. H. HACK, D. L. HAWKE, E. A. OLSON.

National Lead Co., manufacturer of Dutch Boy products, is displaying its equipment for handling chemicals.

National Mud Service
Oklahoma City and Tulsa, Okla.
134 Oklahoma Building

there is no safer, longer lasting chain than CAMPBELL CHAIN

- Spinning Chains
- Boomer Chains
- Winch Line Chains
- Proof Coil Chain
- BBB Coil Chain
- High Test Steel Chain
- Cam-Alloy Steel Chain

Get it from your supply store, and *specify* CAMPBELL

CAMPBELL CHAIN
Company
York, Pa. and
West Burlington, Iowa

Factory Warehouses:
Houston, Texas
Sacramento, Calif.

CAMPBELL CHAIN

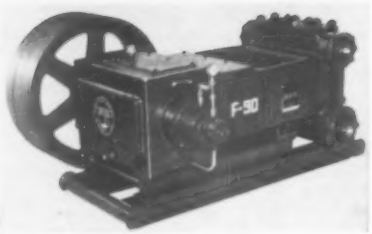
Makers of Famous
Lug-Reinforced
TIRE CHAINS

I.P.E. EXHIBIT DIRECTORY

National Supply Co.
Pittsburgh, Pa.
Block 1

In attendance

W. T. CUSHING, JR., P. W. PLACE, W. R. RYBURN, M. E. SWAIM, A. S. GEORGE, L. L. ANDERSON, R. E. BELL, R. M. BORDEN, J. S. DANIEL, R. A. HECKEL, W. H. HUNTER, G. W. HURTT, F. P. KRETZER, J. B. PICARD, A. L. PITCHFORD, J. R. VANWIE, E. M. WINANS, R. D. STOTTLEMYER, J. G. ABRAHAM, R. N. CORDREY, R. W. CRAIG, V. B. DOLLISON, R. J. DONAGHOE, V. H. GARDNER, A. L. HARRINGTON, C. P. JENKINS, L. L. LEIGH, S. W. LONG, C. L. REAVES, F. SELLICK, M. E. YOUNG, A. W. CAREY, JR., R. PENWELL, J. D. STEWART, A. B. REESE, B. G. SNELSON, RAY YEAGLE, J. B. STEPHENS, C. C. BRUSH, H. H. CLARK, W. A. HARRIES, C. J. RAMSBURG, JR., R. S. SKINNER, R. J. STOUP, C. A. SWARTSFAGER, C. L. BAINTER, J. A. KENNEDY, D. S. NEELY, J. H. ROGERS, W. F. SCHMELING, C. J. STUBBLE, B. J. A. STURROCK, A. S. WEAVER, C. T. REICHERT, G. R. BOND, R. H. CALDWELL, R. H. DIETRICKSON, E. L. HARDER, L. A. HARRIS, D. G. KNOX, T. M. LAWSON, P. K. LEROUAX, G. R. MANSON, J. M. MEADOWS, S. J. MILAM, W. M. POWELL, W. E. RIEGLE, C. R. SPENCER, H. A. WILSON, T. L. TYSON, E. BARTLEY, E. G. BLAISDELL, T. B. BURRIS, S. T. BURTON, T. G. COVERT, A. W. CUMPTON, A. E. FINCH, A. B. GEDDES, J. G. HOWE, T. O. McLEAN, J. D. MITCHAM, M. V. SCHNEIDER, S. S. SHOUP, W. W. WORD.



National Supply's Type F 90 power pump, a triplex horizontal plunger type.

The machinery and equipment displayed by National Supply can all be viewed from its "Rotorama," an unusual structure having a glass-enclosed observation deck. The display includes the principal equipment developed by National Supply since the previous petroleum exposition with much of it being shown for the first time this year. Eight new Ideal drilling rigs ranging from portable to big units are being shown. National's newest Ideal rig is in full operation, powered by a new Superior gas drilling engine, through National's new torque converter. For demonstration purposes, a second engine is operating the slush pump through an Ideal Gyrol fluid drive arrangement. A 200-ft. hole has been spudded in under the new 140-ft. Lee C. Moore mast to permit simulated drilling and hoisting operations. A trailer-mounted Ideal rig is also shown.

Other new equipment, including an Ideal-Gyrol fluid drive, pump parts, sucker rods, the Micromatic drilling control, and wellhead equipment are displayed.

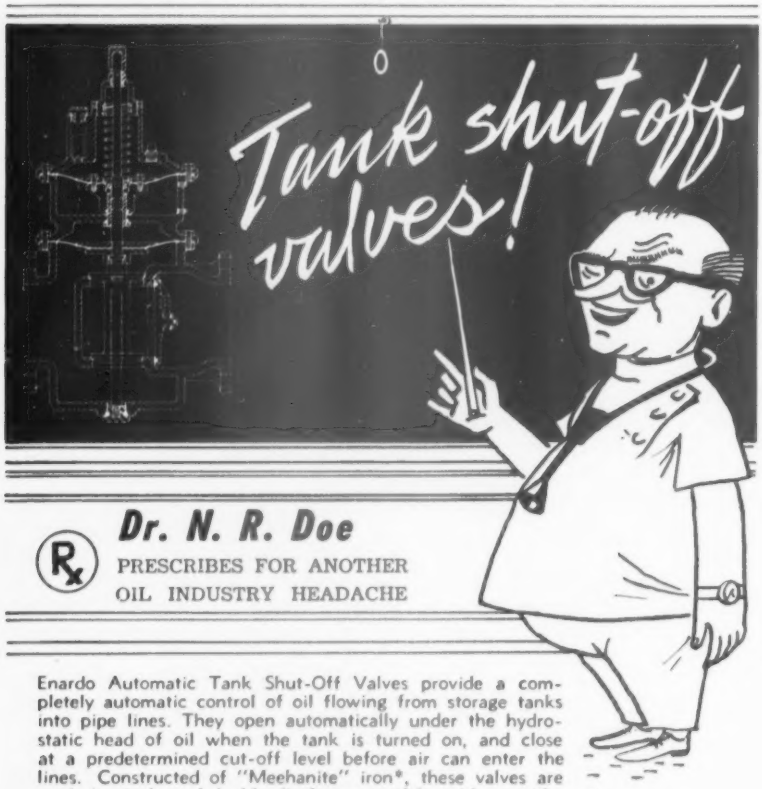
Four new tubular products, Spangweld drill pipe, Spang casing, Spangseal tubing, and Spang Extreme line tubing are among some of the other items displayed.

New production equipment, including a triplex pump for water flooding and salt-water disposal systems, a second pumping unit, a surface hydraulic pumping unit, and National's new subsurface hydraulic engine are also shown.

National Tank Co.
Tulsa, Okla.
Block S

In attendance

L. S. ALLEN, F. W. BAKER, R. W. COGGINS, W. L. DUNN, ALEX W. FRANCIS, IRVINE E. GANDEE, CLARENCE O. GLASGOW, J. F. GIBB, JOHN F. HAWS, KNOX B. HENDERSON, R. A. HODGSON, ROGER LAPLANTE, CHARLES A. LAVERY, LOUIS MAHER, C. O. MEYERS, GERALD McCURREY, RUSSEL MORRIS, JIM A. NEISH, J. E. RICHARD, R. W. ROBSON, JACK B. SHINKLE, TRACY E. SMITH, DON C. UNWIN, JAY P. WALKER, C. G. WELLS, GUS WILDE, EARL KECK, REX MEYERS, MARVIN WHITED, JR., L. L. LAMB, H. C. BUTLER, REX WILLIAMS, JAMES THOMAS, DUANE ROBERTS, CHARLES PURSER, EVERETT MILLER, PAUL MEYER, JOSEPH GREEN, C. W. IMMEL, J. O. BROWN, W. B. ADDISON, L. A. EDMONSON, S. S. PARKER, J. D. LOWRIE, L. F. CONLEY, CLEM KIER, NEELY LOWRIE, J. S. CHISM, SAM MAYS, DONALD STANLEY, H. R. HUDSON, L. M. JEWITT, T. R. GRAHAM, F. L. SENTER, ED FONTAINE, E. C. HILL, PAUL HUGHES, J. W. WALLACE, C. E. DEYOUNG, C. E. GUIN, SHERMAN BARCLAY, E. L. BRINKLEY, J. L. TALLANT, D. R. BOLING, MARVIN WILLIS, GEORGE STEWART, GEORGE STEINHAUS, HARRY MITCHELL, J. H. SHEL-

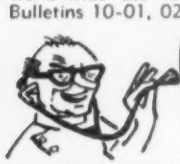


Dr. N. R. Doe
PRESCRIBES FOR ANOTHER
OIL INDUSTRY HEADACHE

Enardo Automatic Tank Shut-Off Valves provide a completely automatic control of oil flowing from storage tanks into pipe lines. They open automatically under the hydrostatic head of oil when the tank is turned on, and close at a predetermined cut-off level before air can enter the lines. Constructed of "Meehanite" iron*, these valves are made in single and double diaphragm models, with or without built-in swing type check valves to prevent oil back-up. Bulletin 9-01.
* Much higher tensile strength than cast iron.

Time cycle switches

Dr. N. R. Doe specially recommends the Enardo Time Cycle Switches. Available for 12 or 24 hour operating cycles, these vapor-proof switches are ideal for turning electrical circuits "off" or "on" at predetermined times. Now in world-wide use for automatic control of pumping units. Bulletins 10-01, 02.



ENARDO Mfg. Co.
BOX 1647 TULSA, OKLAHOMA
TRUTH IN ADVERTISING
"TAKING THE PULSE OF THE OIL INDUSTRY"

The world's most valuable piece of *REAL ESTATE!*

It was from this one soil sample . . . out of tens of thousands from all over the world . . . that a team of scientists in 1950 first isolated the mold growth that produces terramycin. Today, impressive quantities of terramycin produced from this original mold are bringing under control some eighty diseases, including certain serious virus infections.

A vast network of pipes and valves regulate the proportion and control the flow of the liquid media in which the antibiotic mold is grown. To safeguard the purity of this vital liquid from harmful contamination ALOYCO Stainless Steel Valves are used in the plant producing terramycin.

Most of the manufacturers of the new wonder drugs such as terramycin, penicillin, chloromycetin, streptomycin, and neomycin, as well as other leaders in the chemical industries, have come to use many different types of ALOYCO corrosion-resistant valves. Our long and extremely diversified experience in the field together with our pre-testing of alloys under actual line conditions enable us to supply valves of the proper alloy and best design for every corrosive service.

ALOYCO valves go hand-in-hand with chemical progress.

If corrosives play a part in your business, get in touch with us about your own valve needs.

ALLOY STEEL PRODUCTS CO., INC.
1314 West Elizabeth Avenue, Linden, N. J.
3.11

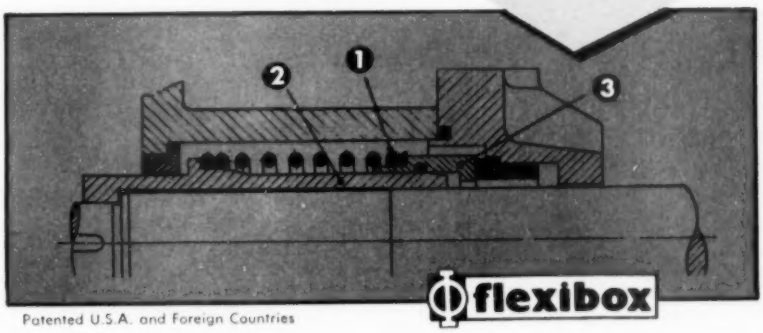
Announcement

SEALOL named exclusive representative in the United States and Canada for FLEXIBOX mechanical seals for process pumps . . .

Flexibox, long recognized as the leading designer and manufacturer of mechanical seals in England and Europe, has now teamed up with Sealol to bring to American Industry the latest improvements in this field. Flexibox designs have already been field-proven by over 15 years in refinery and chemical service, performing safely, economically, and dependably on pumps throughout the world.

Here is the basic Flexibox design showing the unique spring drive feature which insures long life and efficient sealing under all conditions.

The spring ❶ engages the shaft sleeve ❷ at one end and the neck of the rotary seal ring ❸ at the other with interference fits. In operation the coils tend to "wind up", thus further increasing their grip. Consequently, the rotary seal ring ❸ is driven positively yet resiliently.



Patented U.S.A. and Foreign Countries

Now Sealol's own engineering, manufacturing, and service organizations are ready to help you in applying Flexibox designs to your shaft sealing problems. For further information, write to Sealol Corporation, 45 Willard Avenue, Providence 5, Rhode Island.

Chicago, Cleveland, Los Angeles, Philadelphia, Tulsa
In Canada:
Lyman Tube & Bearings, Ltd., Montreal, Toronto, Winnipeg

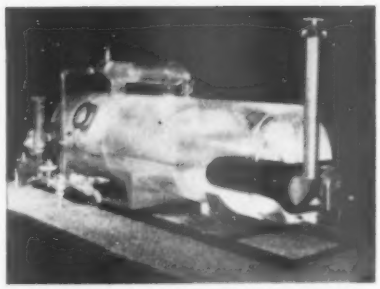
SEALOL

The Balanced Pressure Seal

TON, JAY STAFFORD, PAUL MYERS, JOSEPH CUTHBERT, JOHN SWINEY, W. H. WALKER, R. H. HUMPHRIES, W. A. TODD, H. G. CARTER, JACK WILLIAMS, W. S. GRAY, T. R. HOFFMAN, WILLIAM BECKER, J. R. BECHTOLD, W. E. GUIN, L. W. BURRUS, J. E. POWERS, GEORGE T. POWERS, JOE WELLS, RALPH DELASHAW, BILL WILSON, JOE MARSHALL, JOE NOTLEY, MERLE BRYAN, REX RICKETTS, W. J. HUMPHRIES, W. H. AKIN, LEON HIGGINSON, H. D. JONES, R. M. SPEIR, J. E. BLACKMAN, DICK BROOKS, W. R. WILLIS, O. A. CLAUNCH, C. W. GILBERT, E. E. GRIGGS, L. G. BARBEE, JACK GODWIN, BILL BARKER, NICK QUINALTY, JIM TAYLOR.

A complete line of oil-field production equipment "From Wellhead to Pipe Line" is being shown by National Tank Co. The exhibit contains scale plastic working models, lighted-panel, full-color, flow diagrams as well as full-size field production units. Also on display are cutaway sections of various valves and controls.

In one section of its exhibit National has a group of one-sixth scale clear-plastic working models complete to the smallest detail. One model includes a complete closed-type water-disposal system with emulsion treater, a vertical backwash, and filter vessel and vertical accumulator. Others are a horizontal emulsion treater, a horizontal noncorrosive emulsion treater with a vapor-phase fire tube



Plastic working model of National Tank Co.'s horizontal emulsion treater.

plus an emulsion treater designed specifically to handle low-gravity foaming oil along with a horizontal, double-barrel, high-pressure separator. The full-size equipment display includes a 24-in. by 10-ft. 1,000-psi. separator. Also shown are skid-mounted unitized glycol injector plus a new member of the LTX family, a skid-mounted Monotube stage separation unit, and a low-pressure, steam boiler. Shown in addition are a combination separator and booster, and a 40-ft. joint of 8⅝-in. Armco spiral-welded casing.

National Tube Division
United States Steel Corp.
Pittsburgh, Pa.
Block 2
(See United States Steel Corp.)

Nelson Electric Manufacturing Co.
Tulsa, Okla.
168 Oklahoma Building

In attendance

H. A. NORBERG, R. S. TERHUNE, DICK RAY, PAUL SEE, BEN PIDGEON, JOHN SULTON, TOM BROWN, R. H. DAVIDSON, JACK JACOBS, R. L. LANGSTON, ROBERT HESS.

Encompassed in this exhibit is a wide variety of electrical equipment for the petroleum industry. On display are explosionproof motor starters, air circuit breakers, junction boxes and control stations along with a host of other items including a pipe-line sampler and pipe-line flange insulation.

To show the larger items such as switch gear, substations, instrument panels, and control boards manufactured by Nelson Electric, color photographs are projected on a screen.

New Deal Specialty Co., Inc.
Okmulgee, Okla.
44-N North Area

In attendance

F. H. BURCHARD, BEN COLCHENSKY, LAWRENCE W. HOWELL, M. R. PINKERTON, J. D. ROBERTS.

This company is showing its Deep Well casing elevator, Butler-Type automatic casing spider, conventional slips, and button-type slips. Also displayed is Deep Well deadline anchor clamp and Butler-type wire-line drilling clamps used on cable tools and for controlling spooling of the wire line in rotary drilling. Working models of its Deep Well casing elevator and Butler-type automatic casing spider are also displayed.

New York Air Brake Co.
New York, N. Y.
84N-85N North Area

In attendance

R. L. FIRTH, B. ROSAEN, N. ROSAEN, H. VANDERKAAY, R. LOUP, J. N. RASMUSSEN, E. DAVIS, R. HODGSON, E. HRDLICKA, W. ROOT, H. G. SAUNDERS, J. DAVIS, F. JAMES, F. S. MAIN, JR.

In addition to small and large liquid-han-

Wickes steam generators help refineries operate efficiently year after year

148

Year after year, Wickes Steam Generators have been helping the oil processing industry keep their operations efficient and their maintenance and operating costs low. They can do the same in your plant. Wickes can fill your requirements for any type of multiple drum boiler up to 250,000 lbs. steam per hour at 1000 psi., adaptable to any standard method of firing. Units capable of steam production up to 33,000 lbs. per hour at 1000 psi. can be shop-assembled for immediate installation. Consult your nearest Wickes representative or write us today for descriptive literature and complete information.

Wickes

THE WICKES BOILER CO. SAGINAW, MICHIGAN
Division of The Wickes Corporation • RECOGNIZED QUALITY SINCE 1854

SALES OFFICES: Albuquerque, N. M. • Atlanta • Boston • Buffalo • Charlotte, N. C. • Chicago • Cincinnati • Cleveland • Dallas • Denver • Detroit • Fort Wayne, Ind. • Greensboro, N. C. • Houston • Indianapolis • Los Angeles • Memphis • Milwaukee • New York City • Orangeburgh, S. C. • Pittsburgh • Portland, Ore. • Saginaw • Salt Lake City • San Francisco • Springfield, Ill. • Tampa, Fla. • Tulsa • Washington, D. C.

REDA PUMPS

FIRST CHOICE for Secondary Recovery Water Flooding...

The lower the expense of producing source water from wells for water flooding operations, the greater the ultimate profit.

Reda Pumps for source water wells provide many ways for lowering these production costs.

Improved design and longer operating life *lower* the cost of labor per barrel, *lower* the cost of maintenance per barrel, *lower* the investment cost per barrel, *lower* the cost of fluid per barrel.

Also the ability of Reda pumps to produce greater volumes in limited casing sizes and from greater depths often reduces the number of source water wells required.

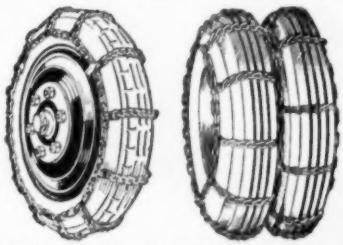
Reda engineers have long been associated with water flooding operations and are fully qualified to assist operators in discussing their source water requirements.

REDA
PUMP COMPANY
BARTLESVILLE, OKLA.

DRILLERS ENTHUSIASTIC OVER TM ALLOY STEEL SPINNING CHAIN

TM Alloy Steel Spinning Chain is the answer to driller's demands for a better product on today's deeper holes. This is proved by its widespread popularity throughout the oil fields. Taylor's 5/16" (11/32" actual), special analysis steel and unique chain-making methods assure spinning chain that has greater life—greater strength and greater safety than hi-test types. It's extremely resistant to shock, grain growth, abrasion and cold working at all temperatures. The short, stubby links assure more flexibility and better grips for faster spinning! Taylor also manufactures TM Alloy Steel Boomer Chains. Spinning and Boomer Chains are available in hi-test types as well. Start taking advantage of the savings to be derived from these famous chains right away. Contact your nearest oil well supply store now! S. G. Taylor Chain Company, Hammond, Indiana.

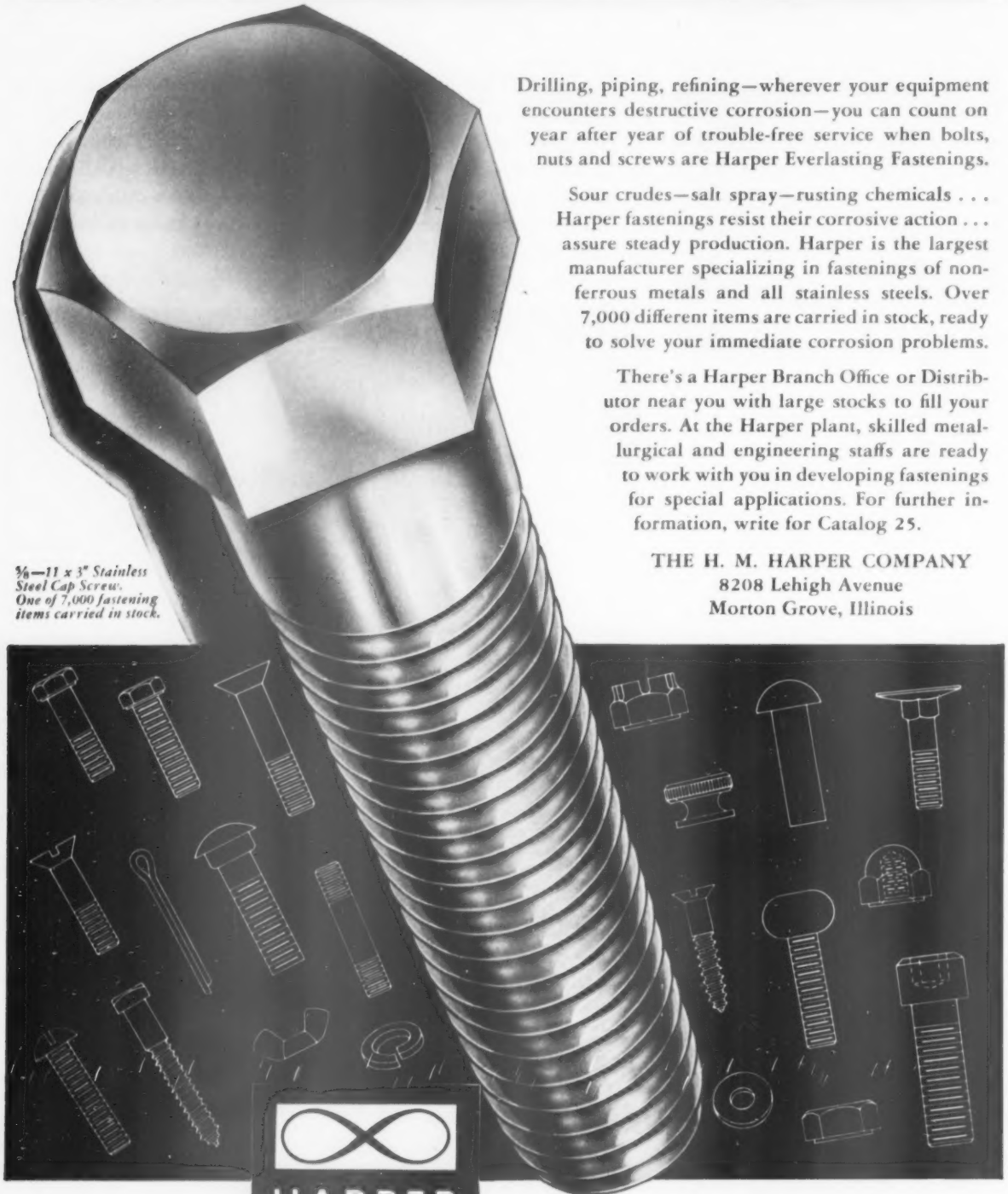
TM Alloy Steel Spinning Chain is stronger—lasts longer than conventional hi-test types. Short, stubby links assure better grips—faster, safer spinning on today's deeper holes!



Taylor manufactures TM Bar-reinforced Tire Chains for passenger cars and truck tires (single, and dual wheel types with triple side chains). Give better traction—longer mileage than regular types.

TAYLOR MADE
A GREAT NAME IN
Chain SINCE 1873

FORGET CORROSION PROBLEMS—USE HARPER FASTENINGS!



⅜—11 x 3" Stainless Steel Cap Screw. One of 7,000 fastening items carried in stock.

Drilling, piping, refining—wherever your equipment encounters destructive corrosion—you can count on year after year of trouble-free service when bolts, nuts and screws are Harper Everlasting Fastenings.

Sour crudes—salt spray—rusting chemicals . . . Harper fastenings resist their corrosive action . . . assure steady production. Harper is the largest manufacturer specializing in fastenings of non-ferrous metals and all stainless steels. Over 7,000 different items are carried in stock, ready to solve your immediate corrosion problems.

There's a Harper Branch Office or Distributor near you with large stocks to fill your orders. At the Harper plant, skilled metallurgical and engineering staffs are ready to work with you in developing fastenings for special applications. For further information, write for Catalog 25.

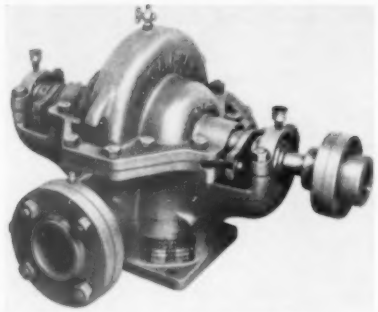
THE H. M. HARPER COMPANY
8208 Lehigh Avenue
Morton Grove, Illinois

HARPER

EVERLASTING FASTENINGS

SPECIALISTS IN ALL CORROSION-RESISTANT FASTENINGS

STAINLESS STEEL • MONEL • BRASS • NAVAL BRONZE • SILICON BRONZE • NICKEL • ALUMINUM • COPPER



New York Air Brake's Aurora centrifugal pump.

dling pumps, this company is also showing a broad range of vacuum pumps and late developments in hydraulic-fluid-power pumps. Included are Aurora centrifugal and turbine types, also Kinney Herringbone-Gear and rotating-plunger types for pumping almost any kind of flowable substance. Also displayed are Stratopower, piston-type units, Duco Dual-Vane and Hydreco Gear pumps for hydraulic-control systems.

A group of engineers and specialists are in attendance at the exhibit to discuss the various products displayed.

New York Belting & Packing Co.
Passaic, N. J.
Block 7

In attendance
J. A. CONLON, W. A. LINFORE, PAUL BREDEN, H. H. RABER.
(See Continental Supply Co.)

W. Norris Manufacturer, Inc.
Tulsa, Okla.
Block X

In attendance
EDWARD C. BOLGER, WM. L. BUTLER, G. W. DAVIDSON, ARTHUR MILLER, JR., A. A. HARDY, J. H. COMAN, P. J. DONNELLY, C. L. SNELLING, D. P. HAGAMAN, C. B. SCHOFIELD, J. E. GILES, JOHN MARSHALL, HAMP BROOKE, W. C. TOLLESON, A. C. CLOUD, M. L. PARKER, K. M. COOK, A. L. ETHRIEDGE, C. T. FAIR, JACK GETTY, DAN COATES, DOYLE BAIN, JACK SCHAFF, CLYDE SIGHTS, D. W. STEWART, W. J. WHITAKER, PAUL COLVARD.

A special feature of this exhibit is "Norrisizing" of swaged nipples and bull plugs on the "Udylite" machine. This electroplating machine is in continuous operation.

Items on display are tubing and casing nipples, weld caps, reducers, casing and tubing heads, swaged nipples, bull plugs, sucker rods, couplings, flow beans, stuffing boxes, sucker rod guides and couplings, tubing hangers, polished rod clamps, working barrel valves, working barrels, turn buckles, and sucker-rod wrenches. An outstanding display is a miniature supply store with a complete stock of miniature oil-field supplies.

North American Phillips Co., Inc.
Mt. Vernon, N. Y.
Block 122D

In attendance
HAZEL PARKER

An electron microscope and a number of other instruments for analytical work are being displayed by Phillips. Technical specialists are on hand, at the exhibit, to demonstrate operating techniques.

Among other apparatus on display by Phillips at the U. S. Bureau of Mines exhibit are a Geiger-counter X-ray spectrometer, an X-ray spectrograph, and film-type X-ray diffraction equipment. Of particular interest is the application of X-ray analysis in development of lubricants and detection of catalysts poisoning agents.

Norelco X-ray spectrograph.

Wm. W. Nugent & Co., Inc.
Chicago, Ill.
171-172 Oklahoma Building

In attendance
JOHN VOCELKA, F. L. TOWNSEND.

This exhibit includes lubricating devices, gravity and pressure-type oil filters, sight-feed valves, sight-flow indicators, and compression union fittings. Feature item of Nugent's exhibit is a large-area pressure filter for full-flow, lube-oil filtering in large engine service.

Oakite Products, Inc.
New York, N. Y.
22-23 Texas Building

In attendance
V. E. BOWES, J. D. HUDSON, L. A. BLANKENSHIP, T. C. ZIMMERMAN, E. F. CONNOLLY, L. W. CUNNINGHAM, R. H. FREE, S. F. HAGLER, W. E. MILTENBERGER, R. E. POLLOCK, W. A. RUSSELL, H. V. WELLS, J. R. WHYTE, J. H. YOUNG.

Oakite is exhibiting its interior-tank-cleaning unit and a fogging unit, both of which are designed for cleaning tank-car interiors. Other equipment includes a complete line of steam-detergent guns for heavy-duty, all-purpose cleaning and paint-stripping operations. Also displayed are specialized chemical compounds for tank-car cleaning, storage-tank cleaning, tower cleaning, paint stripping, heat-exchanger descaling and for other similar applications.

Oil Center Tool Co.
Houston, Tex.
11-12 Oklahoma Building

In attendance
REX GALLOUP.

This firm is showing a new casing head for use on medium-depth wells. Also shown is another recently developed O-C-T tool, a new packer.

Other O-C-T products including JE and Dual Flow controls, A.P.I. flanges, casing and tubing heads are also being shown.

Ohio Injector Co.
Wadsworth, Ohio
219-220 and 231-232 Oklahoma Building

In attendance
WAYNE YOUNG, HARRY G. SMITH, HOWARD G. DOSTER, W. C. DAVIS, HARRY C. BELL, E. L. KINKAIDE, PAUL E. WARNER, D. A. HERRICK, A. A. KRUSE, D. P. GORDON, W. G. SHEPARD, PAUL E. BANKS, PAUL E. BENNER, W. E. CAMERON, E. G. BLAYLOCK.

This company has a complete display of its entire line including bronze, iron, forged steel, cast steel, lubricated plug valves, and pipe-line valves.

Along with a new lubricated plug valve which it is just introducing, Ohio Injector is showing new models of standard line valves.

I.P.E. EXHIBIT DIRECTORY

Oil Forum, Inc.
New York, N. Y.
37 Oklahoma Building

Oil & Gas Directory, Inc.
Houston, Tex.
77N North Area

The Oil and Gas Journal
Tulsa, Okla.
Block 5 (The Oil and Gas Journal Building)

In attendance
P. C. LAUINGER, K. B. BARNES, H. D. RALPH, G. H. WEBER, D. M. DUFF, G. L. FARRAR, PAUL REED, W. L. NELSON, P. C. INGALLS, C. O. WILLSON, R. B. TUTTLE, L. M. NICHOLS, NEIL WILLIAMS, J. C. CASPER, T. A. ARMSTRONG, J. A. KORNFELD, J. C. REIDEL, W. P. STERNE, R. J. ENRIGHT, J. C. McCASLIN, F. L. RESEN, C. M. DAVIS, D. H. STORMONT, C. F. HOOT, B. F. LINZ, R. F. CARLSON, CAROLYN CARTER, MARTHA ALLBRIGHT.

S. H. ROURKE, MITCHELL TUCKER, H. B. PIGMAN, D. W. WILSON, J. P. HOLLAND, J. D. REILLY, G. O. RUPPERT, C. A. WARDLEY, R. N. CAIRD, JR., C. R. FARMER, E. S. KLAPPENBACH, A. M. JONES, J. M. SPEARS, D. O. HANSON.

The Oil and Gas Journal is sponsoring special "Improve Your Reading" tests. The reading tests are given to visiting oil men who wish to test their reading ability. The special tests consist of 1,000 words, during which a reading rate is established. Next, a comprehensive check on the text read is made, and the two provide anyone a good index on whether or not he needs to avail himself of the advanced reading courses now offered to businessmen throughout the country.

The testing is handled by personnel of the University of Tulsa Reading Clinic. All of the individual test papers are sent to the university for grading and the university will mail the test grade to the one examined. The university and the Journal will tabulate only the average reading figures in the oil industry for management men, for technical personnel, and for field supervisors.

The tests are given at the Journal building at the I.P.E. A short 3-minute movie also is being shown, from the Harvard Business School's reading course, to point out the opportunities for improving both speed and comprehension in business reading by following a few simple rules.

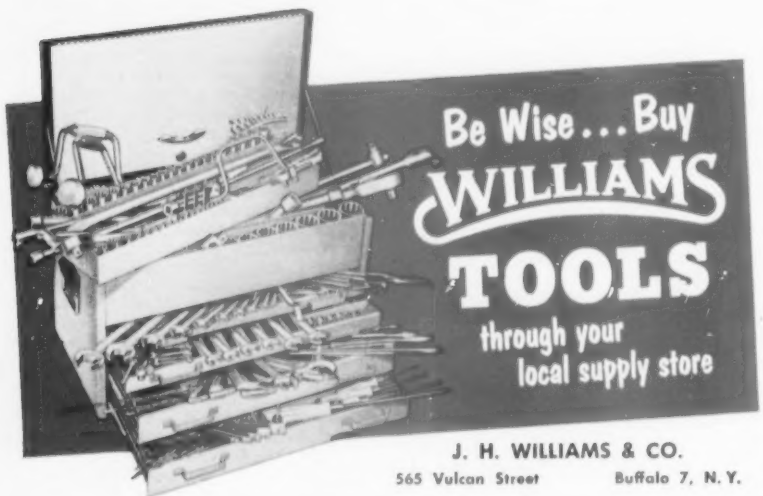
Also, in the Journal's reading clinic, four "reading accelerators" are operated to show the four different rates of speed at which business men should be able to function. These are: Skimming, to locate information; rapid, to get general impressions; careful, to get details; intensive, to analyze.

The University of Tulsa Reading Clinic, a division of the University of Tulsa, is a J. E. and L. E. Mabee foundation. Direction of the reading clinic is by a staff from the University of Tulsa, headed by Miss Loris De Figh.

A complete line of our newest tools . . . including Reversible Chain Pipe Tongs, Wrenches, and IMPACT "Supersockets"® will be displayed. You'll find *New* tools, *New* designs, *New* work-saving features well worth seeing.

A demonstration will convince you that no other tools compare with the balance, "feel" and durability of Williams tools for performance and value. See for yourself how they help do big jobs faster and easier.

This "Superchest" can be yours *FREE*. It is practically a miniature tool room . . . remarkably versatile with convenient compartment, drawers and "tote" tray. And, it's only one of the "Door Prizes" to be given to the holders of lucky tickets which you get when you visit the Williams Booth.



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565 Vulcan Street Buffalo 7, N. Y.

For the Finest Drop-Forged Tools and Drop-Forgings

I.P.E. EXHIBIT DIRECTORY

Oklahoma Oxygen Co.
Tulsa, Okla.
189-190 Oklahoma Building

In attendance

C. K. RICKEL, E. J. KIKER, E. M. PARK, JACK POSTELWAIT, FRANK LEWELLEN, R. F. NICHOLS.

Displayed at this exhibit is equipment which Oklahoma Oxygen Co. represents in Oklahoma. Products of its own manufacture, oxygen, acetylene, and nitrogen, along with products of other manufacturers are shown. Included is Victor welding equipment, Cleco air tools, Nelson stud-welder, and Schramm compressors and pipe-beveling machines.

Oil Well Supply, Division United States Steel Corp.
Dallas, Tex.
Block 2

In attendance

F. F. MURRAY, R. W. RAGER, F. E. LINK, H. M. DRAKE, O. J. FISTER, C. E. WEAVER, G. M. AMSTUTZ, R. K. BAKER, D. R. MOORE, K. O. NILSSON, T. E. REGAN, C. H. STEWART, J. C. IRWIN, E. P. KRAATZ, J. H. FINLEY, R. E. SCHOCH, G. F. GOETZINGER, L. L. MITCHELL, M. F. HAZEL, J. E. MILLER, ALEX QUAYLE, M. L. RIZZONE, R. L. CHENAULT, F. L. CURRENT, R. D. EWING, C. J. KEIM, S. A. KNAPP, C. I. MOHNKERN, HANS VOGELSANG, F. J. KOGEL, HAROLD MINGES, C. W. BENDER, E. W. JOHNSON, W. J. REDMAN, TOM SCHMEIMAN, E. E. STEVENSON, C. A. BELL, C. C. EGNER, J. S. FULLER, J. M. HALL, J. M. HAYNES, G. A. HAYS, J. W. JACOBY, J. M. POST, W. C. RAMSEY, M. D. ROUTZON, P. H. SHEPHERD, L. E. TRACY, K. B. WINSTEAD, K. CHICKERING, T. K. CONE, R. S. HAUGER, N. K. SCHNAITTER, M. E. SHIPPEE, F. M. WILBUR, S. P. GLASGOW, N. E. MEYER, W. F. LOEBL, SR., G. J. KORBELIK, SR., M. E. NICKLIN, P. E. POTTKER, D H. BARR, D. H. BAILEY, P. L. BLAKSLEE, J. E. CHENAULT, Z. T. COLEMAN, R. E. DICKSON, G. E. GRATZ, R. K. HALL, RUBE HARZMANN, E. G. LINK, R. P. LOVE, D. M. LYNCH, R. G. MIESCH, C. H. PINELL, E. R. ROAN, M. L. SHOUP, E. H. WESTFALL, B. A. AUGUST, J. R. COBURN, LEE FABJ, W. E. HANBY, GILBERT HEIDLER, J. R. HENDRIX, W. H. HIATT, L. C. HURLEY, D. H. HYLER, M. F. JONES, R. L. KELLEY, L. D. KINNAN, W. A. LEAVENS, W. S. McLEOD, J. H. PADON, W. C. PHILLEY, R. W. PITTMAN, T. M. PORTER, W. L. REED, R. G. ROBINSON, J. E. SHOEMAKE, D. O. SMITH, H. W. SOLSBERY, H. B. TRACY, R. L. ARMSTRONG, R. C. CRAIG, A. S. FINEFROCK, J. A. FISHER, M. C. HUENEFELD, J. M. LUCEY, T. G. SCHOOLCRAFT, NICHOLAS BALFOUR, H. W. BOOTH, D. R. CUMMING, G. A. FORD, R. D. STONE, E. J. TAUBER, T. L. CAMBELL, E. W. CLARK, J. P. C. DALRYMPLE, D. S. GRUBBS, ERIC LEMKE, J. P. O'NEILL, G. S. STEWART, R. T. WATKINS, H. D. WHITE, OSCAR BEASLEY, P. H. DAVIES, J. L. DEVLIN, T. M. HARVEY, K. J. MILLER, R. E. MOSELEY, RAY PARRISH, B. H. RAVANELL, L. T. TIDWELL, W. A. WEIR, MARK BARKHURST, H. E. BIVINS, R. M. CRANE, T. E. DAWSON, WILLIAM HELDMAR, G. A. JACKSON, M. JACOBY, HENRY KAPPELL, P. A. KENNON, R. F. SHANER, L. A. WEINGART, C. M. WITTUM, G. I. WYCKOFF, C. L. BENEZETTE, G. L. BENSON, J. W. BIBB, JON S. BLYTH, E. L. BUNDY, J. C. DONAHUE, C. F.

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3031 Elm Street
Dallas 1, Texas

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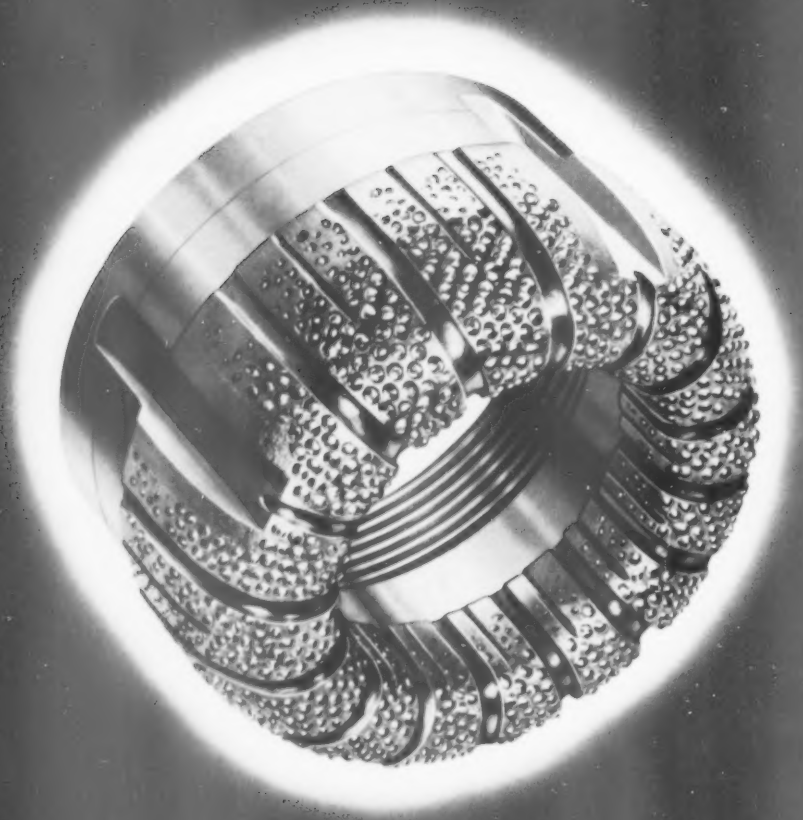

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THE OIL INDUSTRY

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Oilwell's display of drilling machinery includes a complete operating rig. This drilling unit consists of new draw works, three-engine drive, power pump, swivel and rotary. The new and smaller Oilwell-Brantly automatic drilling control plus its portable derrick completes the medium-depth rig. Another rotary unit with Oilwell's new square guard, traveling block, crown block, and power pump plus a swivel for shallow drilling is also on display.

Oilwell's new power pump, especially designed for jet-bit drilling is being featured and mechanical pumping units, including the largest of the 25,000-lb. class, with the new Oilwell adjustable crank, is operating. Shown for the first time is an entirely new hydraulic, long-stroke pumping unit.

Highlighting the subsurface pump section is the firm's new Hi-Brin pump barrel, along with a complete line of other pumps including a 30-ft. Neilsen sectional-liner type pump.

Production equipment being shown includes water-flooding pumps. Also shown are pumping units for truck mounting in connection with cementing and acidizing operations.

Pumps shown for refining and petrochemical plants include the new Wilson-Snyder centrifugal units. Among the other items displayed are In-Line booster and transfer pumps, and the Wilson-Snyder switch valve for coking processes.

For pipe liners, a new Wilson-Snyder unit is on exhibition for the first time. Also shown is a compact pipe-line-gathering pump complete with prime mover.

The compressor and gas-booster units on display are in operation.

New No. 66 draw works and No. 550 drive with the 133-B portable derrick, which can be seen in operation at the exposition.

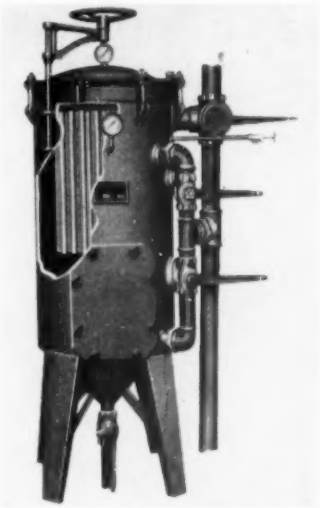
Oklahoma Rig & Supply Co.
Muskogee, Okla.
4 Oklahoma Building

Oklahoma Steel Castings Co., Inc.
Tulsa, Okla.
47-48 Texas Building

Olson Filtration Engineers, Inc.
Chicago, Ill.
88N North Area

In attendance
GEORGE OLSON, DWIGHT EBERT, H. R. AMUNDSEN, R. E. MITCHELL.

Feature of the Olson exhibit is its tubular screen water filter specially designed for water-flooding service. A full-size filter unit with precoat tank is being exhibited along with a glass, cutaway, operating pilot unit.



Olson's tubular water-screen filter unit.

Orbit Valve Co.
Tulsa, Okla.
33-35 Texas Building

In attendance
R. G. COLE, H. C. SAWYER, L. E. WALLACE, JOHN C. MASON, RALPH H. SOAPE, JAMES P. BOWLING, CLYDE H. CHRONISTER, CLAUDE W. BROWN, TOM R. PICKFORD, J. MUMFORD, ED D. LIGON, DON W. BLEVANS.

Orbit Valve Co. is showing its line of A.P.I. class forged-steel production valves and its A.S.A. class forged-steel L.P.-gas valves.

Osgood-General
Marion, Ohio
Block 204

In attendance
JAMES S. FORTINER, FRED W. RAAB, WILLIAM S. HAWKINS, R. S. RHEAY.

Osgood General's hoe unit.

I.P.E. EXHIBIT DIRECTORY

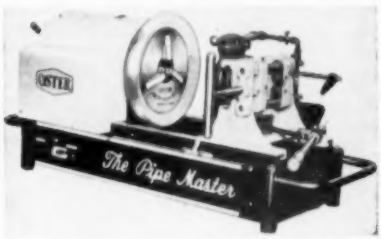
FRANK L. JOHNSON, EARL R. HERB, WILLARD K. HETH, E. W. DARLING, JR.

The major item displayed at this exhibit is a special Osgood pipe-line machine equipped with a gasoline engine and torque converter. The unit is provided with a hoe-boom attachment with arm and a 36-in. Pettibone-Mulliken hoe dipper mounted on wide axles having long crawlers and 22-in. treads. In addition, a General yard-materials truck crane which has rapid movability and remote control attachments for use as a one-man Mobilcrane when working in a limited area, is on display.

Oster Manufacturing Co.
Cleveland, Ohio
32-35 Kansas Building

In attendance
H. C. GARDNER, L. M. GARDNER, E. V. ZIBELL, L. S. NEWMAN, A. S. GOULD, K. A. FERGUSON.

This company is exhibiting and demonstrating two of its "Rapiduction" machines along with its "Tom Thumb" and "Pipe Master" units and a new 4-in. machine.



Pipe Master portable threading machine.

Otis Pressure Control, Inc.
Dallas, Tex.
113 Texas Building

In attendance
K. W. ROBBINS, P. B. LOPER, GUY GANT, TURNER GARWOOD.

Otis Pressure Control's exhibit features cutaway models of its bottom-hole chokes, safety valves, and several other of its removable subsurface controls, along with two types of special nipple assemblies for dually completed wells. Sections of the two-zone well equipment are cut away so that the flow conduits are visible and the method of landing the chokes may be demonstrated. One type of Otis crossover assemblies makes up on a standard hook-wall-type packer. The other type is used in Otis two-zone subsurface pumps. A new chemical injector tool and new models of Otis surface safety valves are also exhibited.

O-T-M Corp.
Houston, Tex.
33N-34N North Area

In attendance
KENNETH BRADSHAW, BILL EVANS, B. R. SANFORD, JR., GENE ACUFF, BIEL BAPTIST, JIM ATKINSON, PETE CRAVER.

Exhibit includes company's line of oil-industry equipment. Among the items shown are forged-steel flanges, seamless welding fittings, plus welding necks along with Robvon backing rings, oval and octagonal steel ring gaskets, orifice flanges.

Owatonna Tool Co.
Owatonna, Minn.
1-2 Scientific and Technical Building

In attendance
T. A. KITCHEN
(Exhibited by Allied Bearings Supply Co.)

I.P.E. EXHIBIT DIRECTORY

Owens-Corning Fiberglas Corp.
Toledo, Ohio
97-98 and 119-122 Kansas Building
In attendance

S. E. BOSLEY, W. H. SEDGEMAN, D. M. BARTHOLD, J. B. ROADHOUSE, V. C. FICHTER, R. J. LITTIN, E. D. ALLEN, VICTOR W. BOEKER, JOHN McBRIDE.

Anticorrosion and industrial construction materials are featured in the Fiberglas display of this company. Anticorrosion materials include Coromat, outer wrap and hand-wrapped fabrics for covering underground pipes. Also shown are high and low-temperature insulation, roof insulation, and sound control products for industrial plants and Fiberglas reinforced plastic pipe and tanks.

Owens-Illinois Glass Co.
Toledo, Ohio
55N-56N North Area
In attendance

JOHN Y. JOHNSON, JR., R. L. LONG, E. E. DRAKE, J. K. DIXON, I. KEITH.

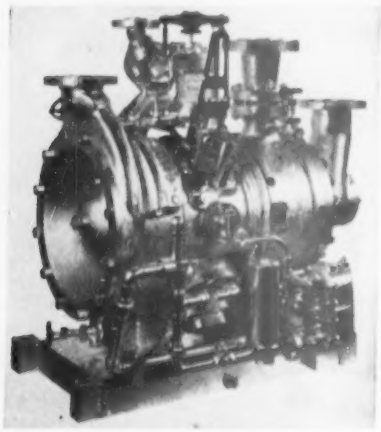
Workability and efficiency of Kaylo heat insulation for high-temperature equipment at refineries and processing plants are featured at this exhibit. Skilled technicians are on hand to show how Kaylo insulation can be cut, drilled, and sawed to fabricate on-the-job fittings for unusual shapes.

Kaylo calcium silicate contains two of the raw materials used in making glass but it is not a glass product. It is the result of a direct chemical reaction between lime and sand and is an end product chemically. It is compatible with standard adhesives and may be bonded to nearly any other type of structural material.

Pacific Pumps, Inc.
One of the Dresser Industries
Huntington Park, Calif.
Block 11

This company is exhibiting models of oil-well plunger pumps, single and multistage centrifugal pumps, and a commercial size steam turbopump. The oil-well plunger pump models are operating with controls to simulate some of the bottom-hole problems encountered in actual operation.

Included in the centrifugal pump exhibit is sectionalized models of horizontal and vertical process pumps together with a multistage high-pressure boiler feed pump. The steam turbopump is a full-size, commercial unit for operation at speeds up to and including 10,000 r.p.m.

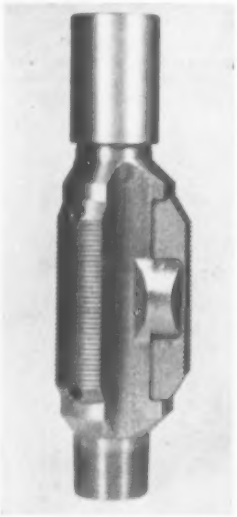


Pacific steam turbopump.

Page Oil Tools, Inc.
Long Beach, Calif.
13 Silver Lane
In attendance

JOHN S. PAGE, JOHN S. PAGE, JR., DAVID P. SICKEL, T. E. AUSTIN, R. L. COZIAR, JR.

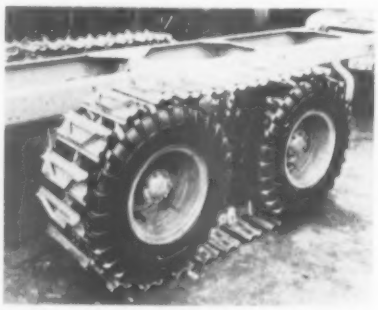
Page Oil Tools is featuring several new products including a tubing anchor, pump anchor, on-and-off attachment, tubing drain, and retrievable cementer. Supplementing these new products is the company's regular line of production tools, and a line of Fluidal valves.



New tubing anchor manufactured by Page Oil Tools, Inc.

P. & G. Supply Co.
Portland, Ore.
Block 203

This company is exhibiting its Galanot Tire Track units. Four different types of these products are being shown.



P. & G. Supply Co.'s Galanot Tire Track.

Palmer Electric Manufacturing Co.
Bell, Los Angeles County, Calif.
10 Park Lane

Palmer Thermometers, Inc.
Cincinnati, Ohio
86 Science and Technical Building
In attendance

DOUGLAS H. HITT, FRANK W. PROBST, M. MOFFORD, CARL GAST, H. R. BOWERS, J. ARTHUR MOORE, A. M. ESCH, J. C. WALKER, Palmer Thermometers, Inc., and H. W. ARDUSER, and HAROLD V. JONES, Arduser & Co.

Palmer is showing all of its products for the petroleum industry. Included in this showing are recording and indicating units with remote measuring elements plus industrial and laboratory type thermometers along with special, toggle-joint dial instruments. In addition to Palmer's "Red-Reading-Mercury" thermometer line, wall-type thermometers and hygrometers are on display.

Henry H. Paris Distributor, Inc.
Houston, Tex.
20-22 California Building
In attendance

HENRY H. PARIS, O. C. THOMAS, JOHN McCRARY, W. L. (LEE) FRANCIS, ALTON EADY, P. D. DICKSON, L. A. BABIN, C. A. BRAWNER, JACK MITCHELL.

The principal products handled by this exhibitor are featured at this exhibit. Included are Alten pumping units; Dresser seamless welding fittings; Globe pipe nipples; Gorman-Rupp centrifugal pumps; Harrisburg steel flanges and couplings; Los Angeles Boiler Works welding caps; Mills Iron Works swage nipples, bull plugs and welding reducers; Mud-"O"-Ring butterfly valves; OIC Valves; Oseco fusible plugs; weld saddles; Volcano burners; Western safety barrel stands; and Wheeling Machine Co.'s steel pipe couplings.

A repeated showing of color motion picture flown in especially from Hawaii is being made. The picture shows the four different eruptions of Mauna Loa volcano.

Parkersburg Rig & Reel Co.
Parkersburgh, W. Va.
Block 8
In attendance

A. SIDNEY KNOWLES, W. V. RATHBONE, A. G. EVANS-LOMBE, D. C. MYERS, G. E. OLLER, JR., R. L. PARSONS, E. F. SPEIDEN, J. A. LYNE, J. O. GRIGG, C. A. ANDERSON, P. L. BROOKS, C. B. MORTON, W L. SPAWR.

This concern is exhibiting a number of products and demonstration models of equipment for oil and gas production. A complete 12 by 40-ft. Parkersburg prefabricated steel air-conditioned building serves as the display room for other Parkersburg products.

The display incorporates a complete 100-in.-stroke Parkersburg pneumatic counterbalance pumping unit in operation. Shown is another pumping unit featuring a newly developed adjustable-type crank counterbalance.

A working model of Parkersburg's horizontal emulsion treater, the latest addition to its pressure-vessel line, is also being shown.

Also displayed is a cutaway model of a 15-in. brake, plus the latest model 46-in. brake for rotary draw works. Parkersburg brakes also are used on rigs being shown by other exhibitors.

A feature of the exhibit is a lighted demonstration model showing the principles of cold separation of gases and liquids. Another feature is a plastic cutaway model of Parkersburg's horizontal oil and gas separator.

Parsons Co.
Newton, Iowa
Block 205
In attendance

H. J. HOLDSWORTH, M. O. MESSENGER, R. J. ARBS

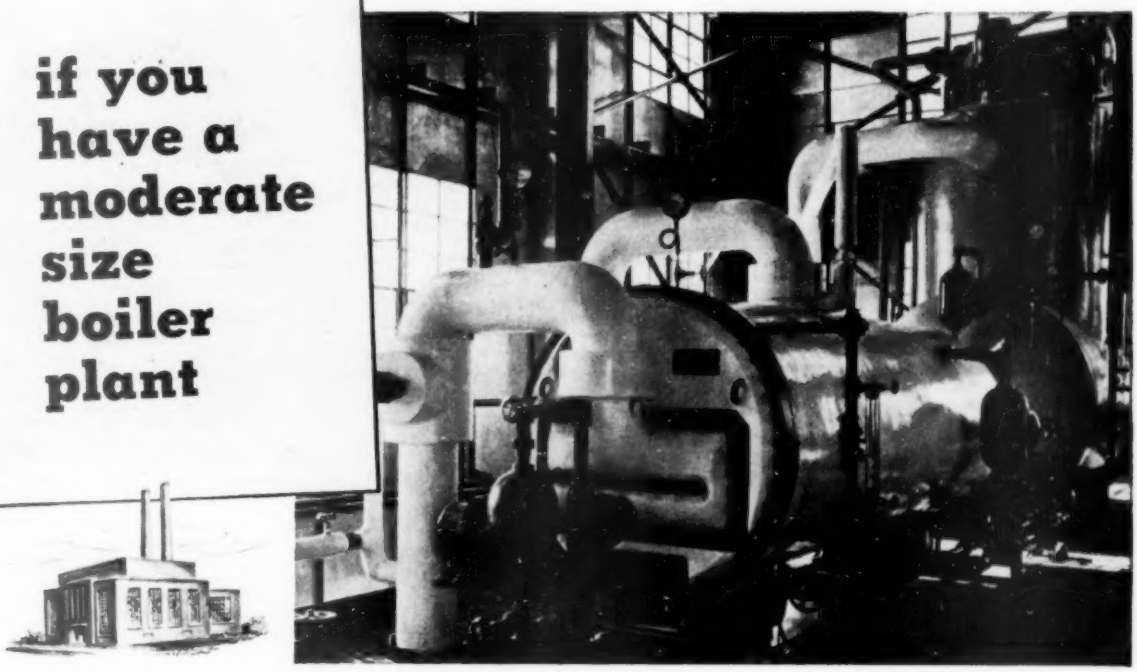
Parsons Co., a subsidiary of Koehring Co., is displaying its wheel-type pipe-line Trenchliner and its mobile, rubber-tired Trenchmobile.

The pipe-line Trencher has a range of 30 digging feeds, from 6.2 in. to 18½ ft. per minute, 13 to 31 in. wide, and to a depth of 6 ft. Equipped with crawler rollers, the machine exerts a low ground-bearing pressure.

Parsons' Trenchmobile can be driven through traffic at road speeds up to 12.6

Important!

if you have a moderate size boiler plant



Evaporators for eliminating the impurities from boiler feed make-up were originally developed for large power generating stations.

However, the results obtained with G-R Type R Horizontal and Type H Vertical Bentube Evaporators in industrial plants all over the country have proved that *moderate size plants* can also frequently profit by the many benefits of distilling the raw water supply.

This is a possibility well worth your investigation. Boiler feed purification by G-R Evaporators does not involve the use of chemicals nor require periodical water tests or manipulation by skilled operators. Moreover, it is the simplest method of eliminating raw water impurities.

Write for complete information.

THE GRISCOM-RUSSELL CO.

MASSILLON, OHIO

G-R Type R and Type H Evaporators are adaptations of the larger Type J-2 Bentube Evaporator—widely used by central power generating stations. They embody the exclusive scale-shedding G-R Bentube heating elements, and have many additional distinctive G-R features that assure ample capacity, pure dry vapor, long service, low maintenance expense and convenient attendance.

GR302

G-R HEAT TRANSFER APPARATUS **Bentube Evaporators**

m.p.h. It is designed for digging in widths of 8 to 12 in. and with variable digging feeds up to 17 ft. per minute maximum. Maximum depth of trench is 5 ft. and the unit is one-man operated for all digging and travel operations.

Partlow Corp.
New Hartford, N. Y.
35 Silver Lane

In attendance
HOWARD W. PARTLOW, JR., WAYNE A. McGREW, CHARLES W. PFLIEGER, B. L. FINN, J. F. CONWAY, C. A. DRUM.

This exhibit features an operating controller, installed on a scale-model National Tank Co. treater, for temperature regulation. Nonoperating displays include temperature controls for use in petroleum operations. In addition to temperature-control apparatus, Partlow manufactures safety gas valves and timers.

Payne Manufacturing Co.
Houston, Tex.
Block 105

In attendance
V. H. PAYNE, W. E. WEBSTER, B. B. MURPHREE, WALTER DUNN, M. F. DELANO, M. L. WILLIAMS.

Featured are the company's two-stage, double-acting simplex pumps. All valves on the pump's power cylinder are pressure actuated and have no mechanical linkage with the power piston. The two-stage fluid end has only two valves. Switching from first stage to second stage is accomplished by fluid pressure and is automatic.

Peerless Manufacturing Co.
Dallas, Tex.
215-216 Oklahoma Building

In attendance
DONALD A. SILLERS, JR., JOHN C. THOMPSON, ALSON H. DOUGLAS, EDWARD F. BROWN, WALLACE E. HORTON, GEORGE S. LEACHMAN.

A plastic working model of a Peerless scrubber is actually separating large slugs of liquid from air at this exhibit. In addition, a mockup of the company's odorizer is on display. This mockup shows the internals in operation as they would be in actual odorization of a natural gas stream. The Peerless MP odorizer is the latest design in the company's line of meter-type, proportional odorizers. Engineering personnel are available to explain the equipment. Complete literature on Peerless equipment is also available.

Peerless Pump Division
Food Machinery and Chemical Corp.
Los Angeles, Calif.
45N-46N North Area

In attendance
R. F. BRISBOIS, S. M. RIORDAN, JR., R. G. BEATTY, P. M. DIXON, R. T. STEPHENS, J. DELBERT CRUMMEY, R. P. YOUNG, R. T. DOTTERY, E. A. ROTH, W. H. GILE, W. T. HARMAN, E. G. LEIPOLD, F. L. GOETZ, G. C. CARNAHAN, W. J. BLAIR, E. W. LUNDY, R. H. HULL, W. E. GRIFFIN, C. C. COOK, F. W. McCANN.

A model cooling tower in operation, sump design, cavitation displays and several refinery process pumps are exhibited by Peerless Pump Division.

Pelton Water Wheel Co.
Los Angeles, Calif.
20 Park Lane and Block 104

In attendance
W. F. BOYLE, DAVE BILLINGS, CLYDE LEITZOW, GENE BELL, GENE BAGLEY, TOM GARRISON, RAY BACCHI, LEONARD NADESWICK.

Penberthy Injector Co.
Detroit, Mich.
13N North Area

In attendance
F. E. RUEBELMANN, HOWARD STROHMEIER, J. C. DENIS, C. JENNINGS, L. H. WELLER, HOWARD HURST, MALCOLM E. REID.

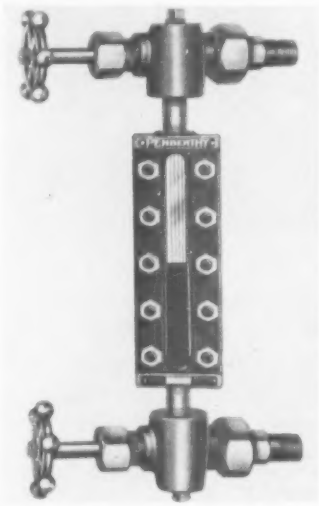
Liquid-level gages having valves with "floating shank," eductors, cycling jet pumps, and explosionproof electric sump pumps are exhibited.

Penberthy's floating shank features a union connection between tail pipe and valve body, so designed that tapping-connection variations up to ⅜ in. are allowable for installation of the valve.

Eductors for use with air, steam, water, or other fluid under pressure for pumping various fluids, including fluids with solids in suspension, or slurries, are among the products displayed.

The Penberthy cycling jet pump, on display, is designed to discharge against heads approximately equal to the gas, air, or steam pressure used for its operation. Other than the float-controlled operating valve and two check valves there are no moving parts in the unit.

The explosionproof electric sump pump on display is powered with a ⅓-hp. capacitor-type motor. Rated capacity is 4,000 gal. per hour against 1 ft. discharge head. Construction is copper and bronze throughout. These units meet Underwriters requirements for hazardous locations.



Penberthy Reflex gage with valves having "floating shank" which permits as much as ⅜-in. variation in center-to-center of tapped holes for mounting on vessel.

Perrault Equipment Co.
Tulsa, Okla.
Block 102

This firm, supplier of equipment and materials to pipe-line contractors, is showing various items. Displayed out of doors is the company's counter-rotating cleaning and priming machine having three rows of knives and three rows of brushes, and powered with a U-4 International engine. Also shown is an 8 to 12-in. single-coat double-wrap coating and wrapping machine powered by a VF-4 Wisconsin air-cooled engine.

In addition are a 25-bbl. mechanically agitated Perrault-American tar-heating kettle; Wisconsin VF-4 air-cooled engine; a new-style Perrault-American burner mounted on 10-ton Athey tracks; plus a 12 to 26-in. pneumatic lowering-in cradle; and a 12-in. tractor bending shoe and mount.

The indoor display includes various wrapping and protection materials including Kraft wrap, asbestos wrap, asbestos pipe-line felt, glass wrap, glass outer wrap for pipe lines, and two weights of rock shield.

There is also a display board of H. & L. digging teeth, H. & M. beveling machine, and miscellaneous equipment.

Perry Equipment Corp.
Mineral Wells, Tex.
Southeast of Texas Building

In attendance
DUNMAN PERRY, DUNMAN PERRY, JR., WILLIAM B. SMITH, MORLEY A. HUDSON, JACK W. RUSH.

Exhibit centers around the company's Peco oil filter.

Petro-Chem Development Co., Inc.
New York, N. Y.
Block 9

In attendance
T. B. LEECH.

This company's exhibit includes colored photographs of various installations incorporating its product. The exhibit is associated with Bethlehem Supply Co.

Petroleo Interamericano
Tulsa, Okla.
Block 5 (Petroleo Interamericano Building)

In attendance
Director: DR. OSCAR B. IRIZARRY; Junta de Redactores: JORGE SARMIENTO, EMILIO VIAÑA, ALICIA PEÑA Y LILLE.

Petroleo Interamericano is the monthly Spanish-English language oil publication serving all oil countries in Central and South America. The oil news and technical articles are for Latin-American operating personnel. The magazine is printed in parallel columns of Spanish and English text, with picture captions following the same pattern. Advertisements also carry the bilingual setup.

Petroleo Interamericano is issuing an official registration list of all International Petroleum Exposition attendees from the Latin-American oil countries and also registrants from the Eastern Hemisphere oil areas.

Petroleo Interamericano has special arrangements at its building for the registration of I.P.E. foreign oil visitors, and in its building in addition is conducting special interviews with these visitors for the accumulation of editorial material and Latin-American oil research data. These Latin-American oil data will be published in subsequent issues of the magazine.

Petroleum Engineer Magazine
Dallas, Tex.
136-137 Oklahoma Building

Petroleum Equipment
Englewood, N. J.
94 Oklahoma Building

Petroleum Publishing Co.
Tulsa, Okla.
Block 5

(See The Oil and Gas Journal, and Petroleo Interamericano.)

Petroleum Specialty Co.
Tulsa, Okla.
50N North Area

Petroleum Times, Ltd.
London, England
133 Oklahoma Building

We're Taking the Wraps Off in Tulsa!

UNIMATIC
An automatic, self-cleaning air filter in which the air is cleaned by a revolving curtain composed of individual filter cells. Recommended for applications where pulsations are a factor and minimum maintenance is desired.
MODEL W11 CYCOIL
Similar in working principle to the famous Model W01 Cycoil Oil Bath Air Cleaner, this unit features a bottom outlet for easy, economical installation — is designed for high-cleaning efficiency on heavy dust loads.
MODEL P01 CYCOIL
A completely new type of oil bath air cleaner designed to handle larger air volumes at lower resistance than conventional oil bath air cleaners of comparable size.

3 New AAF Intake Air Filters

TO BE INTRODUCED AT INTERNATIONAL PETROLEUM EXPOSITION

Step right up to Booths 16-17 and meet these newcomers to the AAF line of intake air filters for engines and compressors. Regular size working models of all three will be in operation so that you can get a firsthand demonstration of their many new and practical features.

Other AAF units on view for your inspection will be the Type OC, a unit viscous filter, and the Type PL-C, a dry type filter with disposable media. As always, experienced American Air Filter engineers will be available at all times to interpret these filters in terms of your specific equipment and dust problems.

If you value your engine and compressor investment, your time will be well spent at the AAF exhibit. Let's get together in Tulsa!

You Can Expect the Best From

American Air Filter
COMPANY, INC.

AAF

444 Central Avenue, Louisville 8, Kentucky • American Air Filter of Canada, Ltd., Montreal, P. Q.

Here's why so many companies use TIMKEN® bearings in crown and traveling blocks

CROWN and traveling blocks are more stable, need less maintenance, last longer when the sheaves are mounted on Timken® bearings.

Timken bearings hold sheaves in accurate alignment—take radial and thrust loads in any combination.

Heavy cable loads are no problem for Timken bearings because line contact gives them load-carrying capacity to spare.

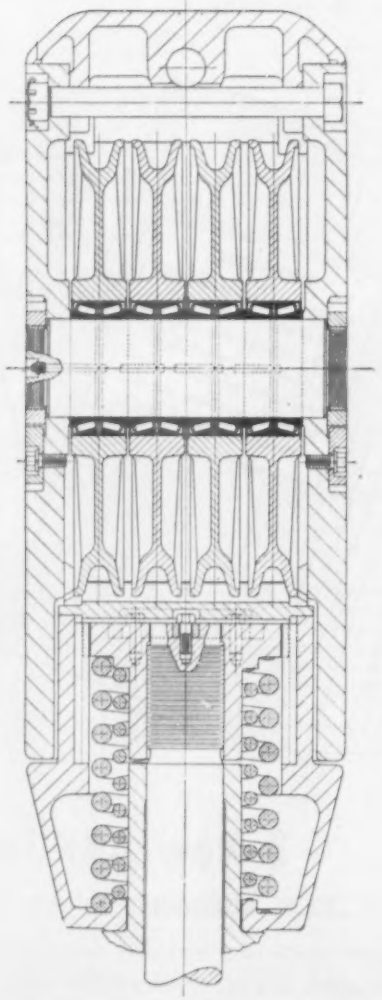
Sudden shock loads are taken with ease because Timken bearings are case hardened to give them hard wear-resistant surfaces and tough shock-resistant cores.

Because Timken bearings have true rolling motion and smooth surface finish, bearing friction is minimized. Sheaves turn easily—cables last longer.

Closures are more effective. Dirt and moisture stay out, lubricant stays in, because Timken bearings hold sheaves and shaft concentric.

Be sure to specify Timken bearings in the equipment you build or buy. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

This symbol on a product means its bearings are the best.



Typical mounting of Timken tapered roller bearings in a traveling block.

VISIT US AT THE I. P. E.

Be sure to see the Timken Bearing Exhibit at Booths No. 139, 140, 141, 142 in the Oklahoma Bldg. at the International Petroleum Exposition (May 14 to May 23).

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

TAPERED ROLLER BEARINGS

NOT JUST A BALL ◯ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ◫ AND THRUST →◫← LOADS OR ANY COMBINATION ✳

Pipe Couplings, Inc.
New York, N. Y.
90 Texas Building
(See Victaulic Co. of America.)

Petreco Division of Petrolite Corp.
Tulsa, Okla.
Block V
In attendance
ROBERT L. GREEN, JESSE R. LONG, IRA S. BOYDSTUN

Petreco Division is featuring two new processes. One of these is its new electric distillate-treating process and the other a new electric lube-oil treating process. Large-scale colored photomurals of commercial installations of these processes form a part of the display. In addition, Petreco is making available information on its electric desalting process.

Phillips Petroleum Co.
Bartlesville, Okla.
106-107 Texas Building
In attendance
G. R. AMES, GEORGE GREEN, GLENN HOHIMER

A miniature lubricating-oil-canning operation features Phillips' exhibit. In addition, a moving picture giving the story of petroleum from production to consumer is being shown.

Pipe Line Development Co.
Cleveland, Ohio
72N North Area
In attendance
FRANK VAN ANTWERP, T. J. HENRY, J. B. SMITH, J. L. WRIGHT.

At this exhibit two new items are being shown for the first time. First of these is an expansion joint designed especially for the petroleum industry. The second new item is a silicone compound developed for pipe-line leak repair. This repair packing, suitable for higher-temperature applications, is used with the company's pipe-line repair clamps.

In addition to the two new items, Pipe Line Development Co. is showing the latest developments in its standard line of products for repair and maintenance of pipe lines.

New pipe-line repair clamp.

Pittsburgh Corning Corp.
Pittsburgh, Pa.
41-42 Kansas Building
In attendance
C. P. BARRETT, W. H. POLK, HOWARD G. JONES, CLAUDE C. KELLY, HARRY E. PORTER, R. H. WILLIAMS.

This company is showing its Foamglas industrial insulation.

Pittsburgh Steel Co.
Pittsburgh, Pa.
4-6 Texas Building
In attendance
A. R. MAXWELL, JR., M. J. BAIR, E. R. SMITH, B. R. MUELLER, K. H. BENDER, A. S. VANDERVOORT, JR., G. W. NOVAK, T. R. MILLER, J. D. SMITH, W. C. SCHAFER, R. F. SUTHERLAND, S. M. McMAHON, JOHN WAIS, E. E. CATER.

The feature of Pittsburgh Steel Co.'s exhibit is an action model of its new high-speed, oil-well-casing finishing facilities at Allenport, Pa.

Displayed is the company's line of oil-country seamless steel tubing, casing and drill pipe; mechanical tubing and pressure tubing; specialty precoated steel strip; and specialty wire products.

Poole Foundry & Machine Co.
Baltimore, Md.
83-84 Texas Building
In attendance
L. M. RICKETTS

A flexible coupling which is self-aligning, and especially designed for high speeds, is being shown. These couplings carry their load on crowned gear teeth formed on the periphery of each shaft hub. These teeth mesh with corresponding teeth on the interior of a floating and connecting sleeve member. The gear teeth are the only parts in contact and are continually submerged in oil while running.

Pool is also displaying a flexible coupling made to fit the tapered shaft of mill-type motors.

Precision Products, Inc.
Tulsa, Okla.
42-43 Oklahoma Building
In attendance
G. E. NICHOLSON, CHARLES E. RIDLEY, W. D. MILLER

This exhibit is comprised of a display of small precision parts and an imported Swiss automatic screw machine in operation, plus a small gear-and-pinion cutting machine. An electronic weighing machine for small parts which has just been developed is also in operation.

H. C. Price Co.
Bartlesville, Okla.
203-204 and 247-248 Oklahoma Building
In attendance
HAROLD C. PRICE, J. S. DEWAR, JOHN M. THOMAS, ELMER L. GALLERY, ROBERT P. WHITE, HAROLD C. PRICE, JR., DAVID J. KERR.

A model of the new Price Tower which will be erected soon in Bartlesville, Okla., is the feature of H. C. Price Co.'s exhibit. In addition to this model of its new office building, H. C. Price Co. is displaying a large, modernistic, plastic map showing routes of many of the nation's principal pipe lines and indicating those portions constructed by Price. Also displayed is a section of 20-in. pipe coated with both Somastic and Hevicote, two products manufactured and applied by Price Co.

Process Equipment Co.
Tulsa, Okla.
77 Kansas Building
In attendance
WALTER S. SMITH, J. T. McKINNEY, JIM C. CHASE

Process Equipment Co. is a service organization which represents various manufacturers including Marley Co. and Eastern Industries, Inc.

Procon, Inc.
Des Plaines, Ill.
62 Scientific and Technical Building

This exhibit consists of a pictorial presentation of typical installations of refinery facilities handled by Procon in various parts of the world.

Progressive Brass Manufacturing Co.
Tulsa, Okla.
11 Texas Building

I.P.E. EXHIBIT DIRECTORY

% Proportioneers, Inc. %
Providence, R. I.
83-85 Science and Technical Building
In attendance
RUDY P. LOWE, ROBERT H. GLANVILLE, PHILIP V. CROWTHER, % Proportioneers, Inc. %, and H. W. ARDUSER, HAROLD V. JONES, Arduser & Co.

Displayed at this exhibit is a working model of the company's new drum-size, "Loss-In-Weight" unit for TEL blending, inhibiting or dyeing. Also shown is a two-component blender for butane and gasoline, asphalts, oils, and for chemicals. In addition to the two-component blender, a fixed-ratio unit for adding top cylinder oil to gasoline during loading into tank trucks is being shown.

Augmenting its indoors exhibit, the company has a demonstration trailer parked adjacent to the Hall of Science building.

Plomb Tool Co.
Los Angeles, Calif.
115 Oklahoma Building
In attendance
R. C. RICKE

A new Proto torque-limiting wrench which has automatic release is being featured at Plomb Tool Co.'s exhibit. For operation of the new wrench, the desired torque is set by turning the handle, just like a micrometer. When the preset torque is reached, the wrench releases automatically and signals the operator. On removal of hand pressure, the torquer resets automatically for the next operation.

In addition, various other tools in the Plomb line are being shown.

Ratchet-head and plain-head models of the Proto torque-limiting wrench.

Public Service Co. of Oklahoma
Tulsa, Okla.
Near Southwest Corner of Cafeteria
In attendance
H. S. KILBY, J. E. DALEY, B. H. MORPHIS, JAMES SHAW, W. T. WALTERS

Housed in Public Service Co.'s own enclosure is an exhibit of its integrated electric system serving the oil industry in Oklahoma.

Purolator Products, Inc.
Rahway, N. J.
17-18 Oklahoma Building
In attendance
CARLOS D. KELLY, RICHARD T. KARR, MARTIN J. STOLTZ, DONALD C. HUBER, DAN MacLEAN, E. L. SAND-

I.P.E. EXHIBIT DIRECTORY

BERG, C. DALE SHULTS, CHARLES W. WULFF.

Displayed are large filter units for filtration of gasoline and lubricating oils for use in stationary installations at airports and refineries, along with smaller units for various services.

Purolator's gasoline filter with 750 g.p.m. rating.

Pyrene Manufacturing Co.
Newark, N. J.
39 Oklahoma Building

In attendance
S. C. WILLIAMS, JR., A. TOTH, A. F. RATZER, W. W. KEMPHERT, J. FAULKNER, R. PENNSTROM, N. L. ROCKEY.

A complete line of air-foam, fire-fighting equipment as well as other types of fire-fighting equipment is displayed. These products include eight different kinds of Pyrene air-foam compound, one each of four capacities of foam playpipes of new design, built of aluminum for light weight. Also included is one large-capacity playpipe designed for turret installation.

Focal point of the exhibit is a scale model of an oil-storage tank with a Pyrene air-foam pressure-line inductor system on one side and a Pyrene air-foam proportioning tank system on the other side. The two small foam houses have transparent plastic roof and walls to show the foam equipment and piping inside.

Pyrene's general line of fire extinguishers of the vaporizing liquid chemical foam, soda-acid, pump tank, cartridge-operated water and antifreeze types as well as the carbon dioxide and dry chemical units made by its affiliate, C-O-Two Fire Equipment Co., are displayed.

Pyrene Manufacturing's foam tower.

Quaker Rubber Co.
Division of H. K. Porter Co., Inc.
Philadelphia, Pa.
Block 5

In attendance
E. M. UHLS, D. E. BUTLER

Quaker Rubber Corp., Division of H. K. Porter Co., Inc., is exhibiting its products for the oil industry. The display shows actual products and photographs of products in use. These products include industrial hose, fire-protection hose, belting, molded rubber products, and packing.

Featured is Quaker's Ebonite oil suction hose, built for oil-handling duty. Wrapped, molded, horizontal braided, and Chernak-type construction hoses for carrying gasoline, oil, liquefied petroleum gases, air, water, steam, and welding gases are shown.

A substantial portion of Quaker's exhibit is devoted to fire hose. Another section of the display shows samples of A.P.I. approved V belts and flat transmission belting. In this section, swab rubbers, packer rubbers, tank-dome gaskets, and a belt sling are also displayed.

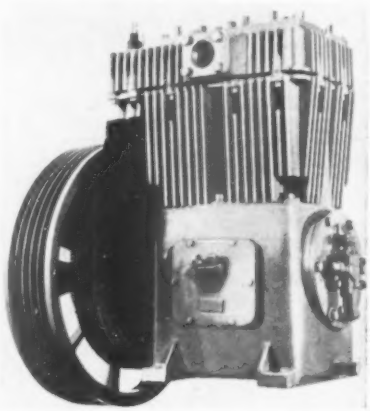
Still another section of Quaker's exhibit is used to display samples of oil, gasoline, and solvent resistant packings. Of the new Quaker products shown for the first time is a wire-reinforced, butane-propane hose, Qua-Flex tank truck discharge hose and Dacron fire hose for use in refineries. Two other new products being shown are an all-purpose hose for carrying air, gas, and oil, and a new 200-psi. steam hose, which is reinforced with both steel wire braids and high-tensile fiber-glass braids.

Quaker Rubber Corp. wire-braided hose.

Quincy Compressor Co.
Quincy, Ill.
38N North Area

This company is featuring one of its new compressors. The display includes equipment representing the complete line of Quincy compressors in the industrial field. The featured unit, a vertical air-cooled, two-stage compressor for higher-pressure requirements, is designed for use on drilling rigs and for general, compressed-air supply service. It provides continuous pressures up to 200 psi. maximum and intermittent pressures up to 250 psi. maximum.

Features of the new compressor include a copper, finned intercooler between low and high-pressure cylinders, cushioned steel valves, dustproof crankcase, lightweight semi-steel pistons, Lynite connecting rods, Timken tapered bearings, constant level oiling, balanced crankshaft, and loadless starting.



Quincy Compressor Co.'s new, oil-industry, general service unit.

Ramsey Winch Manufacturing Co.
Tulsa, Okla.
North of California Building

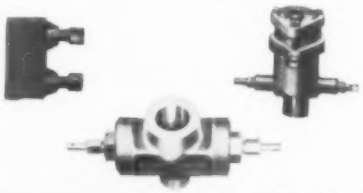
R-S Products Co.
Philadelphia, Pa.
61N-62N North Area

In attendance
DAVID W. HOPKINS
(See S. Morgan Smith Co.)

J. P. Ratigan, Inc.
Los Angeles, Calif.
212 Oklahoma Building

In attendance
C. J. RATIGAN, L. W. HENSHAW, J. J. CAVE, G. M. SEYBOLD, GARY S. EMERSON.

The complete line of Ratigan oil-well pumping equipment is on display at this exhibit. Featured are Ratigan's polished-rod grip, blowout preventer, and stuffing box.



J. P. Ratigan, Inc., products. Right, stuffing box; left, polished-rod grip; and center, blow-out preventer.

Raybestos-Manhattan, Inc.
Passaic, N. J.
15-16 Scientific and Technical Building

In attendance
H. H. BURROWS, R. B. HAZARD, D. E. GOW, E. W. NAGLE, E. L. ALDERSON, P. C. POOLE, U. R. DUNAWAY, O. W. ROTE, O. C. HALL, L. B. BERRY, J. A. MINNICK, E. T. FAIR, W. H. KRETZ.

Two new products are being featured by Raybestos-Manhattan, Inc. These are its rotary hose built with a cable wire strength member, and its "Vee-Square" packing rings for all sizes and makes of mud slush pumps. The rotary hose, rated at 5,000 psi. working pressure, is equipped with the new streamlined "Lip-Lok" built-in coupling having leak-proof seal. The new packing is designed for automatic sealing of the V-ring. Soft rubber cushions between the rings prevent "blow-

What's NEW

In Perforating, Logging, and Fishing Tool Services

McCULLOUGH
NEW SERVICES • NEW TOOLS
NEW WAYS OF DOING THINGS

Latest News About New Tools, Techniques and Services

SEE THEM NOW at the Tulsa Oil Show!
New and Improved **McCULLOUGH TOOLS**
You've Heard So Much About

McCULLOUGH SCINTILLOMETER

The new McCullough Radiation Well Logger with the amazing Scintillometer (Gamma Ray and Neutron) will demonstrate its superior ability to clearly and accurately log beds of any thickness at any speed. You will be permitted to test the acute sensitivity of the new instrument with the feeble rays of your luminous dial watch. A completely equipped McCullough Radiation Well Logging Truck will be on display.

McCULLOUGH M-3 BURRLESS BULLET PERFORATOR

The improved McCullough M-3 Burrless Bullet Perforator, the hardest shooting gun perforator in the world, features an increase of 25% in penetration over former McCullough bullet type perforators. The M-3 will outshoot any comparable size bullet or jet gun through one string of casing into soft or medium hard formation. McCullough M-3 Perforators, Burrless Bullets and actual penetration samples will be on display.

McCULLOUGH GLASS JET PERFORATOR

McCullough Glass Jet Perforators feature many new improvements. New bayonet type, junk-free Steel Strip Carriers—one third less explosives, yet two-thirds deeper penetration in solid steel targets—now available in three types; Standard Casing Glass Jet, Super Casing Glass Jet and Super Formation Glass Jet—exclusive slug-free, straight sided holes. Particularly applicable through multiple strings and in hard and extra hard formation.

McCULLOUGH TYPE "B" BRIDGE PLUG

The only one-piece, drillable, all metal, explosion-expansion bridge plug. Drills out easily—no moving nor hardened parts to impede drilling out. Resists corrosion and electrolysis. Saves rig time in running, locating and setting. Plugs in open hole in hard formations. Assures a positive seal under the heaviest loads. Special display will permit you to weigh yourself and pressure test plug at the same time.

McCULLOUGH MAGNA-TECTOR AND BACK-OFF SERVICE

Be sure to see these remarkable tools. The Magna-Tector measures both stretch and torque in stuck pipe, locates lowest free point. The McCullough String Shot loosens first joint above the free point. Combines all the advantages of both the Magna-Tector and String Shot into a single service with one set-up. Many remarkable jobs have been accomplished at great savings to the operator.

McCULLOUGH OTHER NEW AND IMPROVED TOOLS

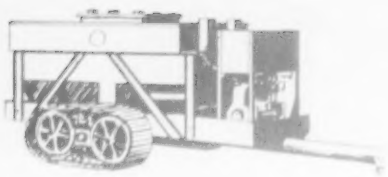
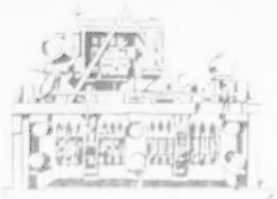
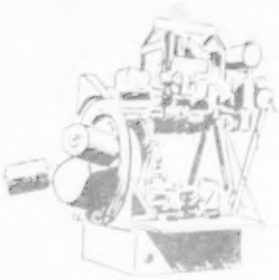
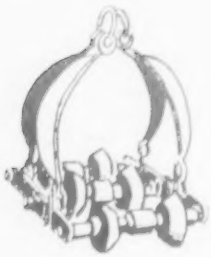
The complete line of all other McCullough Electric Wire Line and certain Fishing Tools will also be on display, including the McCullough Bottom Hole Jet Cutter, Jet Casing Cutter and Double Acting Rotary Jars—tools that have been used with outstanding success in every active oil field in the world. Qualified McCullough representatives will demonstrate the amazing abilities of all McCullough Tools.

LOCATION—BOOTHS 22-23-24. Use Entrance No. 2 from Twenty-First Street (the main street to the show from Tulsa) at the southeast end of the show grounds. McCullough booths are to the right of the entrance, opposite Old Timers Headquarters.

PERFORATING, RADIATION LOGGING, AND FISHING TOOL SERVICE—ANYWHERE—ANYTIME.

McCULLOUGH TOOL COMPANY
5820 South Alameda Street, Los Angeles 58, California
405 McCarty Street (P. O. Box 2575) • Houston, Texas
CABLE ADDRESS: MACTOOL
EXPORT OFFICE: Los Angeles, California
CANADA: Edmonton, Calgary, Grande Prairie, Alb.; Regina, Saskatchewan
VENEZUELA: United Oilwell Service Co., S.A.; Caracas, Anaco, Maracaibo

SERVICE LOCATIONS: **TEXAS:** Houston, Snyder, Alice, Cisco, Corpus Christi, McAllen, Odessa, Tyler, San Angelo, Victoria, Wichita Falls, Luling, Beaumont, Sherman, Midkiff, El Campo. **OKLAHOMA:** Oklahoma City, Guymon, Healdton, Hominy. **ARKANSAS:** Magnolia. **MISSISSIPPI:** Laurel. **NEW MEXICO:** Hobbs. **KANSAS:** Great Bend. **WYOMING:** Casper. **CALIFORNIA:** Los Angeles, Avenal, Bakersfield, Ventura. **LOUISIANA:** Houma, Lake Charles, New Iberia, Shreveport. **COLORADO:** Sterling. **NORTH DAKOTA:** Williston. **UTAH,** Vernal.

m.j. Crose
MANUFACTURING COMPANY, INC.

and affiliates:

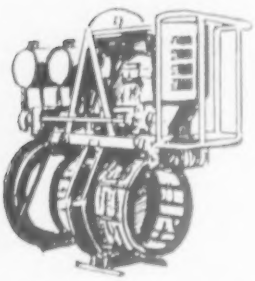
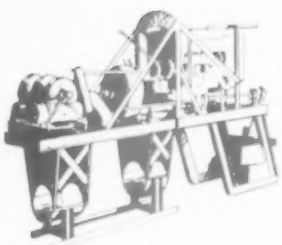
Crose Pipeline Supply Co.
Houston, Tex. & Birmingham, Ala.

Crose Pipeline Equipment Co.
Newark, N. J.

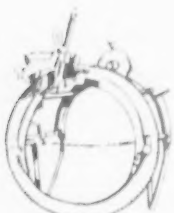
Crose-Curran Ltd.
Edmonton, Alberta

Pipeline Anode Corp.
Tulsa, Oklahoma

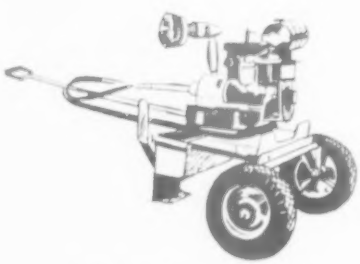
Crose-Curran Equipment Center
Tulsa, Oklahoma

Invite you to see our complete display of the finest in pipeline equipment at the International Petroleum Exposition in Tulsa, May 14-23, at the corner of Rocky Mountain and Permian Basin Plaza (Block 116 in the West Area)



M. J. CROSE MANUFACTURING COMPANY, INC. TULSA



ENDLESS PIPE BELT SLINGS
PIPELINE CRADLES
PORTABLE ELECTRIC GENERATOR
PORTABLE BUFFING UNITS
MAGNESIUM ANODES
ANODE INSTALLATION SERVICE

COATING & WRAPPING MACHINES
CLEANING & PRIMING MACHINES
PIPELINE KETTLES
ROAD BORING MACHINES
CUTTING & BEVELING MACHINES
INTERNAL LINE-UP CLAMPS

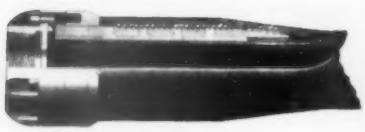
Manufacturers and Distributors of

PIPELINE EQUIPMENT, MATERIALS AND SUPPLIES

Houston, Texas
Aurora, Colo.
Newark, N. J.

2715 DAWSON ROAD
PHONE 6-2172
TULSA, OKLAHOMA

New York, N. Y.
Birmingham, Ala.
Edmonton, Alberta



Raybestos-Manhattan CBL rotary hose.

by" and provide proper fit with suitable sealing pressure against the rod.

Other products displayed by Raybestos-Manhattan, Inc., are: V-belts, plus oil, air, water, steam, and fire hose, along with brake blocks for rotary draw works, packings, and gaskets.

Rector Well Equipment Co., Inc.

Fort Worth, Tex.

19-21 Oklahoma Building

In attendance

L. L. RECTOR, J. L. PINKARD, JOHN L. CURRY, C. L. CRON, M. O. ANDREWS, A. J. LABATE, W. P. KNIGHT, C. D. McDONALD, HOWARD M. JOHNSON, DENVER BOLLES, G. A. LASTRAPES, JR., BLAKE FISHER, W. R. TIPSWORD, R. B. YANAWAY, MARSHALL KESTLER, JOHN P. SCOTT, G. M. ROBINSON, RICHARD R. RECTOR, M. C. DAVIS, RAYMOND J. WILEY, GEORGE S. BADGER.

The entire line of Rector Well Equipment Co. products is being exhibited. Several new items developed during the last year are prominently displayed. One of these new products is a slip-packoff assembly which can be wrapped around the pipe and lowered through the blowout preventers. It sets and seals simultaneously. The assembly is designed for use in the Rector type "RH" casing head and utilizes the "metal to metal" seal featured in all Rectorheads.

Rector "Fulbore" line of cementing equipment is displayed with particular emphasis on a recently developed stage-cementing tool. This tool enables the operator to run two wiper plugs on the first stage and also two plugs on the top stage.

Cutaway views of all featured products are displayed. Five men are at the exhibit at all times to discuss design, engineering, and operation of the entire line of Rector products.

Reda Pump Co.

Bartlesville, Okla.

50-51 and 54-55 Kansas Building

Reda is showing its line of submergible centrifugal units. Included is a complete range of pumping equipment from 300 to 15,000 bbl. per day with lifts from 1,500 to below 10,000 ft. Fluid volume ratings range from 2,500 bbl. daily for 5½-in. o.d. 24-lb. casing, up to 18,000 bbl. daily for 8⅝-in. o.d. 43-lb. casing. Reda's submersible units are also suitable for supplying water from source wells in water-flooding operations.

Reading-Pratt & Cady Valve Division American Chain & Cable Co., Inc.

Reading, Pa.

174-175 Oklahoma Building

In attendance

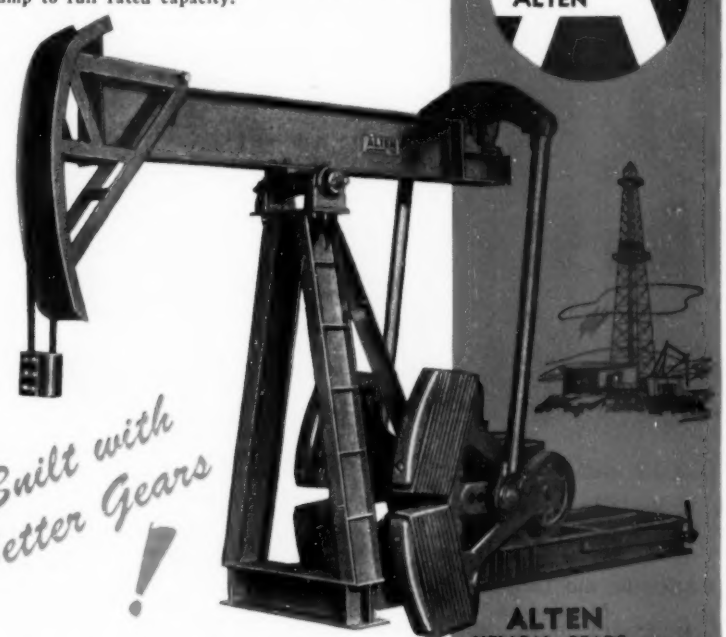
C. L. HASLUP, J. J. REED, H. G. FOY, J. T. COWAN, G. S. FORD, A. B. CASSELL, C. E. FRIEND, E. H. LUND, J. C. DILWORTH.

Reading-Pratt & Cady Valve Division is showing its complete line of valves for the oil industry. Included are steel, iron, and bronze types.

ALTEN Pre-Tested PUMPING UNITS

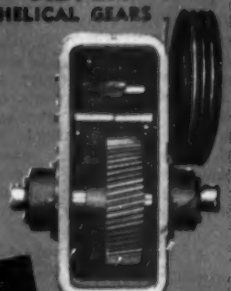
Give Positive Performance

Every Alten unit is ready for instant, uninterrupted operation the moment it is delivered. Thorough factory pre-testing stops breakdowns before they occur. You can be sure every Alten will pump to full rated capacity.



Built with Better Gears!

ALTEN HELICAL GEARS



Ordinary gears cannot provide the continuous year in, year out performance you get from these Alten helical gears. First of all they are hob cut so that each tooth has a perfect profile that is permanent. No unflexing V centers to induce uneven wear; all stress is evenly distributed throughout the entire surface . . . then these gears are SUPER-FLAME hardened to produce hardest surfaces obtainable. Without hesitation—ask for Alten the next time you buy a pumping unit. You'll be glad you did.

At Your Supply Store

SALES OFFICES
Lancaster, Ohio
Olney, Illinois
Hutchinson, Kansas
Duncan, Okla.
Abilene, Texas
Houston, Texas
Casper, Wyoming
Edmonton, Alberta, Canada

—ALTEN—
Foundry & Machine Works, Inc.
LANCASTER, OHIO

WAREHOUSES
Lancaster, Ohio
Wichita Falls, Texas
Houston, Texas
Casper, Wyoming
Edmonton, Alberta, Canada

EXPORT OFFICE
New York City

I.P.E. EXHIBIT DIRECTORY

Reed Roller Bit Co.
Houston, Tex.
Block 4

In attendance

S. P. FARISH, R. G. HAMAKER, W. L. CHILDS, JR., JACK KNIGHT, H. O. HELLER, BEAU WENDT, DENVER WOFFORD, JOHN TEER, CHARLIE FONTAINE, FRANK GIGNOUX, BEN HANLY, STEVE HAZLIP, E. A. MILLER, R. C. GANN, R. F. ROBERTS, R. V. ELLIS, W. H. ARMSTRONG, H. B. BOOK, W. J. GREEN, J. R. BRANDON, H. B. WILSON, J. A. KELLY, A. G. CHANDLER, M. J. CUETO.

Part of this exhibit is by Reed and part by its Cleco Division which is showing a line of portable air tools.

Reed is exhibiting its complete line of oil-well drilling tools. Featured is the Twin Blast rock bit.

Martin-Decker Corp. is also showing its weight-recording instruments at Reed's exhibit.

Reed's Twin Blast rock bit.

Refinery Engineering Co.
Tulsa, Okla.
50 Scientific and Technical Building

In attendance

T. M. LUMLY, D. O. GIVENS, J. E. WESTENBERG, HOMER V. FLEMMING, HERBERT E. DYER.

Refinery Engineering Co., a service organization specializing in design and construction of oil-industry operations and processes, is featuring color transparencies of refinery-construction projects which it has completed.

Engineering personnel are available to discuss the services offered to the petroleum industry by the company.

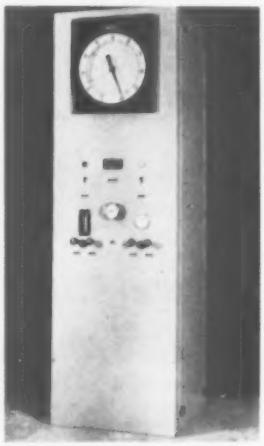
Refinery Supply Co.
Tulsa, Okla.

In attendance

W. A. SCHLUETER, J. B. OKESON, T. C. WILLIAMS, BOB MAUL, DON HAMPTON, BOB VANDERVELD, J. T. GOSSETT.

8-10 Scientific and Technical Building

Refinery Supply Co.'s exhibit features the latest improvement in operation and design of its R. S. and Ac-Me testing instruments. Displayed is a wide variety of specialties for oil and gas testing. Specialties manufactured by Refinery Supply Co.'s sister company, Central Scientific Co., are also displayed. In this group are eight Cenco items, a Supervac pump, and a Waring blender.



Dew-point recorder displayed by Refinery Supply Co.

Regan Forge & Engineering Co.
San Pedro, Calif.
198-199 Oklahoma Building

In attendance

B. S. MINOR, J. W. THATCH, E. KIRBY

Regan Forge is featuring its AN-55 crown block and traveling block. This new crown-and-traveling-block team is designed to stand up under line speeds and loads of the largest drilling rigs. Tilting has been completely eliminated and side drag sufficiently reduced to allow the block to fall very rapidly. Along with the display of these and other Regan products, technicians are on hand to answer questions.

Reliance Electric & Engineering Co.
Cleveland, Ohio
Block 206

In attendance

E. E. HELM, J. L. VAN NORT, W. C. McCONNELL, E. E. VONADA, K. F. ERTELL, F. A. DENISON, E. R. WESLEY, H. A. PLOCH, O. L. SMITH, J. H. LEE, J. C. ROWE, W. E. BOYD, V. J. CARNS.

Newly developed motors and motor drives for refinery, pumping station, and allied oil industry applications are exhibited in a large mobile display. Also included are operating, cutaway, and other displays of Reliance oil-industry products.

Available for operation is the Reliance V*S Drive, a packaged, all-electric adjustable-speed drive which provides a wide range of standard, equipment-operating, control functions, including quick, smooth starting and stopping and smooth acceleration and deceleration. Reliance V*S, Jr., an adjustable-speed drive developed for application to small machinery also can be operated.

Other exhibit highlights include a cutaway display of an a.-c. motor illustrating its construction and assembly features, and a lubrication demonstration of Reliance motors showing that "you can't grease 'em wrong."

Electronic control accessories and individual motor and control parts are also included. Varied motor and drive system arrangements based on the V*S principles are depicted by wall-mounted illustrations.

Reo Motors, Inc.
Lansing, Mich.
Block 202

In attendance

R. D. JACOBS

The new Industrial and Marine Engine Division of Reo Motors, Inc., is displaying its line of industrial engines. Featured are several typical industrial engines with complete details available on all models currently in the line. Present Reo models include a series of spark-ignition industrial engines for use with gasoline, natural-gas fuel, liquefied petroleum gas, or dual-fuel carburetion.

Republic Steel Corp.
Cleveland, Ohio
102-115 Kansas Building

In attendance

MANLY B. BROWN, GILES LOCKE, WILLIAM NECKERMAN, FORREST H. RAMAGE, WILLIAM E. FRUHAN, E. E. HAUBEGGER, CARL W. DILLON, J. M. HIGINBOTHAM, JAMES R. WOOD, JOHN McGINLEY, E. H. WARDLE, H. H. OLDHAM, J. E. OSMAN, H. T. HECKMAN, DONALD DONAHUE, HENRY A. BOURNE, ROBERT A. LIESER, Republic Steel Corp.; and J. C. CLAWSON, Meldrum & Fewsmith, Inc.

Among the new products displayed at this exhibit are samples of seamless oil-country casing made at Republic's new seamless-tube mill in Chicago. Samples are 5-ft. lengths of J-55 seamless casing in 5½ and 7-in. diameters. Casing was first produced on this mill just last March. The new mill produces seamless casing and tubing in grades through N-80.

Other Republic products on display are fusion-welded line pipe, electric-weld line pipe, electric-weld casing, and electric-weld tubing. Electrunite pipe and tubing made by Republic's Steel and Tubes Division plus Niles steel shipping containers made by its Pressed Steel Division along with fasteners made by the Bolt and Nut Division are also shown. Various types of oil-country equipment and petroleum processing and handling products fabricated by Republic customers from alloy and stainless steels are also included.

Republic Supply Co.
Oklahoma City, Okla.
99-101 and 116-118 Kansas Building

In attendance

M. N. AMSDEN, J. H. BROOKS, H. B. CATLOW, H. H. HAIRE, W. W. CLIFT, DON L. COLLINS, H. L. ELLIS, W. M. HAYNES, I. R. KNIGHT, A. V. MATHENY, J. J. MILLER, RAY A. PRATER, P. H. ROBERTS, C. B. STANLEY, JAMES E. WEBB.

Republic is featuring information concerning products of almost 100 manufacturers which it represents. Technical data on everything from complete drilling units to valves and wrenches is available at the exhibit location.

Republic serves as a major outlet for Republic Steel's tubular products, and distributes a complete line of oil-well drilling machinery as well as derricks, substructures, gas, gasoline, and diesel engines. The company also supplies all types of equipment required in the producing, pipe-line, refining, and petrochemical branches of the oil and gas industries.

Reynolds Metals Co.
Louisville, Ky.
95-98 Oklahoma Building

In attendance

W. T. INGRAM, F. L. SARGEANT, W. W. BEASLEY, W. O. YATES, W. B. MOORE, L. S. BEELER, M. A. O'BANNON, JOHN STALEY, J. F. O'KEEFE, R. T. BRYANT, M. W. HALL, J. K. KINGSOLVER, W. P. LILJESTROM, L. E. PENNINGTON, C. M. ROBERTSON, L. V. SHEAIN, A. R. DAVIS, JR., E. E. ELLWOOD, R. R. GOOD, F. R. HAEUSER,

Harry J. Schafer, President; Tommy Ward, Vice-President, and Harry J. Schafer, Jr., Secretary-Treasurer, with newest Wheland HP-14000 pump.

FIELD RECORDS AND REPEAT PURCHASES PROVE THAT THE

WHELAND

350 Horsepower

7½" x 14" PUMP

is the *BEST BUY!*

This pump delivers the mud!

Attention:
JET BIT DRILLERS

Send for authenticated data on jet bit drilling with this pump.

SCHAFER DRILLING COMPANY

612 Liberty Bank Building
OKLAHOMA CITY, OKLAHOMA
Tel. REgent 9-1607

April 9, 1953

Mr. Gordon Street
The Wheland Company
Chattanooga, Tennessee

Dear Gordon:

In the past twelve months we have purchased four complete rotary rigs, all of which are equipped with Wheland Pumps. You and your company deserve the highest compliments for manufacturing a pump of such efficient and economical operation.

Sincerely,

SCHAFER DRILLING COMPANY

Harry J. Schafer, President

HJS:ah

cc: Mr. George Sutter
Supply Division
Jones & Laughlin Steel Corporation
Tulsa, Oklahoma

WHELAND

THE WHELAND COMPANY, CHATTANOOGA, TENN., U. S. A.
ROTARY DRILLING MACHINERY

DOMESTIC DISTRIBUTORS
Jones & Laughlin Steel Corporation
Supply Division
Tulsa, Oklahoma
Stores and Offices in all Principal Oil Fields and Centers

EXPORT DISTRIBUTORS
Lucey Export Corporation
233 Broadway,
New York 7, N. Y.
Broad Street House
London E.C. 2, England

DRAW WORKS • SLUSH PUMPS • ROTARIES • SWIVELS • CROWN BLOCKS • TRAVELING BLOCKS

R. N. PETERS, D. L. RUSSELL, J. T. SHIELDS, C. J. TATUM, W. G. ACUFF, H. E. HICKS, H. FRENCK, K. G. PECK, A. C. KINTNER, M. WINTERS, M. REES.

Reynolds Metals Co.'s exhibit is made up of panels, each telling a separate story of how aluminum in every shape and form is being used to advantage in the oil industry. Featured are pipe and welded parts, insulation jacketing, heat-exchanger tubing, instrument air tubing, pigments for paints and roof coatings, and basic chemicals. A flow chart of the oil route from ground to consumer illustrates where aluminum fits into petroleum operations. Manufactured aluminum products are also displayed along with Reynolds aluminum industrial roofing and siding and other building products.

Ric-wiL Plastic Coating & Manufacturing Corp.
Cleveland, Ohio
11N North Area
In attendance
J. R. ROWE, N. L. MOONEYHAM, DON R. WIECHERT.

Two types of coating, Ricwilite 7100 cold-set and Ricwilite 1060 baked-on are featured at this exhibit. Along with these corrosion-resistant phenolic resin coatings, the company is displaying its parent company's insulated piping systems. In addition to the two basic coatings, silicone resin coatings for extreme high temperature use are being shown.

Only one of the company's various types of insulated piping systems is on display. This piping unit is a prefabricated system, of 21-ft. lengths, for quick installation with the pipe or pipes and insulation housed in a 16-gage, spirally corrugated ingot-iron conduit.

Ric-wiL insulating system.

Riddle & Hubbell
Tulsa, Okla.
Adjacent to Cafeteria
In attendance
J. W. CANNON, S. P. BORDEAU, H. L. RENKING, MARTIN DONZE, RUSSELL C. BALL, JR., H. L. MURRAY, W. C. WILKINSON, F. L. DONOVAN, J. B. MATEER.

Riddle & Hubble Co., manufacturers' representative, is exhibiting several new equipment items. Among the items are:

A Lucite-enclosed working model of revolutionary oil lubrication system as manufactured by Continental Electric Co., Inc., for use on ball-bearing electric motors.

A working model of a new type, floating-shaft, flexible coupling utilizing a hollow torque tube, manufactured by Thomas Flexible Coupling Co. This exhibit is actually rotating at high speed, but by use of a Stroboscope, the action can be "stopped" for observation.

A full-scale model of a new remote-reading thermometer for storage tanks. The device indicates average temperature of stored products regardless of the height of liquid in the tank. This equipment is manufactured by Weston Electrical Instrument Corp.

A cutaway working model of a waterproof electric motor manufactured by Electric Machinery Manufacturing Co.

Lucite-enclosed working model of a Limitorque valve operator manufactured by Philadelphia Gear Works, Inc.

A new, oil-immersed knife switch with plug-in feature developed by Rowan Controller Co.

Ridge Tool Co.
Elyria, Ohio
28-31 Texas Building
In attendance
R. C. CHAMBERLAIN, R. D. FYE, L. C. RICHARDSON, E. C. BLISS, SETH W. SMITH, M. M. FRIED, W. L. PARCELL.

Featured at Ridge Tool Co.'s exhibit is its new spiral-taper pipe and conduit reamer. Capacity of this Ridgid tool is from ⅛ to 2 in. A new portable power unit for hand threaders, cutters, and reamers is also being shown. The unit is equipped with universal motor for forward and reverse operations.

Ridge Tool Co.'s new power unit for hand threaders.

Another new Ridgid tool on display is a portable pipe and bolt threading machine. Capacity of this new machine is ⅛ to 2-in. pipe; ¼ to 2-in. bolts. A geared-head motor supplies variable forward and reverse power.

Rochester Ropes, Inc.
Culpeper, Va.
94-95 Texas Building

Rockford Clutch Division
Borg-Warner Corp.
Rockford, Ill.
45-5N North Area
In attendance
H. L. EMERSON, G. L. CHRISTIANSON, C. H. GARMAGER, F. K. POST, R. A. CARLSON, A. M. REIBITZ, A. H. ANDERSON.

Exhibit of Rockford Clutch Division is featuring its gear-tooth, over-center clutches with standard, S.A.E., bell-housing sizes for multiple-cylinder engines up to approximately 200 hp.

Also displayed is a spring-loaded-clutch power takeoff used in loaders such as Frank G. Hough and Pettibone-Mulliken units. Reduction gears of various sizes using both gear-tooth-drive, over-center clutch and spline-drive over-center clutch are included in the exhibit.

Rockwell Manufacturing Co.
Pittsburgh, Pa.
33-34-35 Scientific and Technical Building

John A. Roebling's Sons Corp.
Trenton, N. J.
69-70 Scientific and Technical Building
In attendance
WALTER A. HUBER, F. S. BURTCH, J. C. BARNEY, A. C. SCHNEIDER, ALBERT NERONI, E. A. FRAZIER, GEORGE P. HAYS, R. A. HILL, V. E. HIGDON, G. A. KNIGHT, JOHN DEAS.

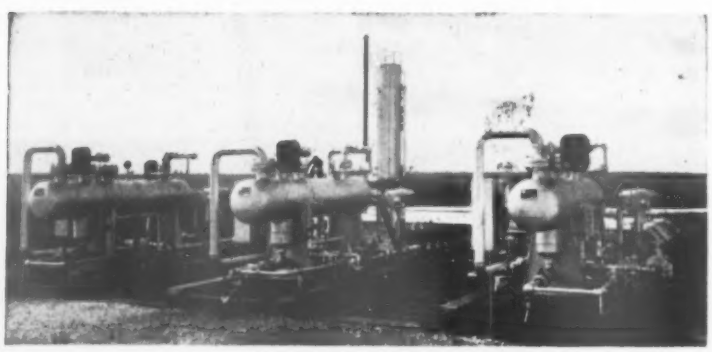
Roebling is displaying a comprehensive range of wire-rope constructions for oil-field and industrial uses. In addition, a variety of wire-rope slings are being exhibited.

Rollway Bearing Co.
Syracuse, N. Y.
83-84 Texas Building
In attendance
ALFONS ALVEN, W. B. SMITHERS, H. E. KAYE.

Rollway Bearing Co. is showing its line of roller bearings for industrial applications.

Rolo Manufacturing Co.
Houston, Tex.
Block V
In attendance
R. K. FRANKLIN, W. M. BOREN, R. G. OLIPHANT, P. A. CLOWER, J. L. KEPPLE.

This company, specializing in crude-oil metering, is exhibiting its horizontal Wellchecker unit. This unit separates a production stream into three phases, oil, gas, and water, measuring the flow of each stream. Also being shown is a free-water knockout unit and oil metering equipment with automatic b.s. and w. sampler.



Installation of Rolo Wellcheckers.

PIPELINE PIONEERING *by* PRICE . . . .

Visit our booths in the Oklahoma Building at the International Petroleum Exposition in Tulsa May 14-23.

. . . from a humble beginning to America's Foremost Pipeline Constructors . . .

Electric welding was in its infancy when Harold C. Price established the Electra Welding Co. in 1921 with a single welding machine and two employees. The electric welding of large oil storage tanks marked the company's first success. In 1928, H. C. Price Co. electric welded a 263-mile oil line and was in the pipeline business for good. It became the world's largest pipeline contractors. Then came the Big Inch and Little Big Inch . . . the Canol Project . . . the Biggest Inch and Toughest Inch . . . and many more. Today, after 31 years and 22,000 miles of pipeline achievement, H. C. Price Co.'s reputation for dependability has established it as "America's Foremost Pipeline Constructors." And, as it views the future, HCPCO looks forward to the opportunity of even greater service to the oil and gas industry.

H. C. **PRICE** CO.

PIPELINE **PRICE** CONSTRUCTORS

PHILADELPHIA ● BARTLESVILLE ● NEW ORLEANS

America's Foremost Pipeline Constructors

Also Processors of SOMASTIC and HEVICOTE Pipe Coating Materials

Here in Time for the "Tulsa Oil Show"

It's New

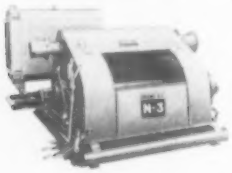
The New Brewster "Little Big Rig" designed for 6,000′ drilling programs.

BREWSTER'S **N45** DRAWWORKS

See the Oil Industry's newest rig unveiled on opening day, May 14.

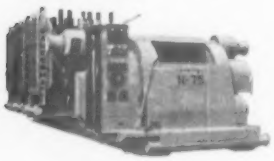
TULSA OIL SHOW **BREWSTER EXHIBIT** ON SILVER LANE

4 of Brewster's great line of drawworks will be "rigged up" and in full operation for your inspection.



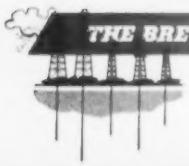
N-3 Drawworks

N-55 Drawworks



N-75 Drawworks

and Brewster's newest rig, the *N-45 Drawworks*



THE BREWSTER COMPANY, INC. SHREVEPORT, LOUISIANA

BREWSTER DRILLING EQUIPMENT

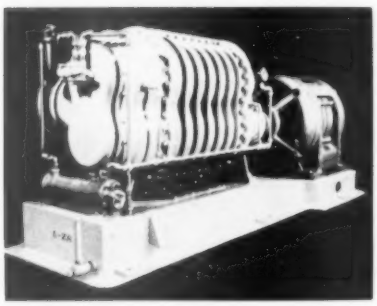
Roots-Connersville Blower
Division of Dresser Industries, Inc.
Connersville, Ind.
Block 11

In attendance

R. R. NEWQUIST, D. A. JOHANN, D. B. HUTCHCRAFT, S. S. SAMPLE, G. H. SAMPLE, M. A. ALTRUP, FRANK M. NEIL.

A unit called the "Spiraxial Compressor," entirely new in principle and design within its range, is displayed by Roots-Connersville Blower. A plastic-enclosed model of the new air or gas compressor unit shows the functional operations of its "Spirotor" construction. Instead of conventional rotors, the new compressor employs two intermeshing screw-rotors which rotate in opposite directions. These screws are rotated by gears synchronized to prevent contact, allowing close but definite clearances between them. The flow of air or gas is axial, with most of the compression taking place at the back of the casing.

Another new product, an impeller-type meter for measuring flows of gas or air, is also being shown along with a variety of the company's regular line of equipment. Roots-Connersville Blower manufactures a wide range of centrifugal compressors, blowers, and boosters in both single and multi-stage types. Rotary pumps and inert gas generators are among the other products manufactured by Roots-Connersville Blower.



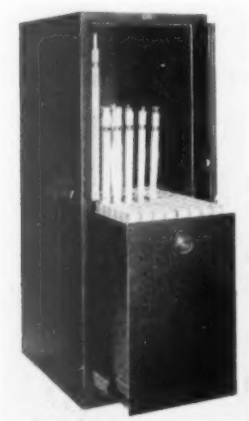
Roots-Connersville Spiraxial compressor.

Ross-Martin Co.
Tulsa, Okla.
13 Scientific and Technical Building

In attendance

R. T. CURTIS, BERT BRAMMER, JEAN ARWOOD.

Exhibited is a line of steel filing cases for strip logs, maps, and various other oil-industry records.



Steel filing case designed for maps.

Roth Manufacturing Co.
Tulsa, Okla.
Aerovent Fan Co., Inc.
Piqua, Ohio
44-45 Texas Building

In attendance

A. W. ROTH, R. K. BILLINGS, Roth Mfg. Co.; and J. F. TILTON, Aerovent Fan Co., Inc.

Roth Manufacturing Co. is showing its L.P.-gas steam vaporizer and Aerovent Fan Co., Inc., is exhibiting one of its new large-diameter fans. The vaporizer unit is a steam-heated, drum-type unit designed for flash vaporization of L.P.-gas for use in industrial plants, utilities, and operations in the process industries.

The new 16-ft. four-blade fan, the first in the large-diameter field for Aerovent, features a special hub section. The fan blades are individually balanced so as to be interchangeable. The hub is balanced as a separate unit. Related pitch markings for blades and hub eliminate special tools for pitch setting in the field.

Also on display is Roth's newest design ventura throat galvanized steel fan rings for large-diameter propeller fans.

Royston Laboratories, Inc.
Blawnox, Pa.
37N North Area

In attendance

H. C. O'BRIEN, JR., J. H. ROYSTON, L. G. ROYSTON, R. A. WALTON, H. N. STROTHMAN.

Royston Laboratories, Inc., manufacturers of Roskote, cold-applied resin-base pipe mastics, Royston Glas-Wrap, and distributors of Dow magnesium anodes, is displaying several new products.

Orco insulation, a chemical and electrical insulation in sheet form, is being shown as a patching material and for protecting joints of coal-tar-enameled pipe lines. These pads are sealed to the steel and coal tar by a newly developed adhesive, Roybond.

Roylac aluminum for combating corrosion is another new product on exhibit.

Rust-Oleum Corp.
Evanston, Ill.
129 Kansas Building

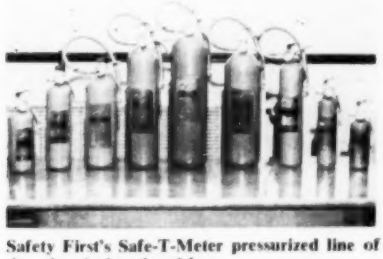
In attendance

JACK HOLT, OTIS CASANOVA, A. A. AHLFF, NEIL NOAH, EARL LYON.

Highlight of this exhibit is an actual demonstration of Rust-Oleum being applied directly over rust. Another demonstration is made of a new, specially designed, extra-long, lambswool roller for recoating wire fences. Complete literature, illustrating new Rust-Oleum oil-field finishes with color chips, is being distributed.

Safety First Products Corp.
Elmsford, N. Y.
2N North Area

This company is featuring its "Safe-T-Meter" line of dry chemical (pressurized) fire extinguishers. The extinguishers are suitable for all-weather exposure resisting extreme heat or cold, excessive vibration or abuse. The propellant gas is mixed with the powder, and the operating pressure indicated at all times on the gage.



Safety First's Safe-T-Meter pressurized line of dry chemical extinguishers.

Sapulpa Tank Co.
Sapulpa, Okla.
34 Park Lane

In attendance

DON JUDD, WALTER BROWN, LLOYD CLIFTON

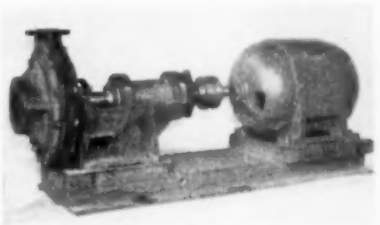
This company is showing a model of its cone-roof tank.

Saran Lined Pipe Co.
Ferndale, Mich.
223 Oklahoma Building

In attendance

S. H. BLACKMORE, J. O. MORROW, WAYNE SCHOONOVER, WILFRED R. SWARTZ.

Saran Lined Pipe Co. is showing a variety of its products. Featured is 3 by 2-in. saran-lined centrifugal pump. In addition to its saran-lined pipe, valves and fittings, the company is showing rubber and wood-lined items plus Sarancote and Phiogard coatings.

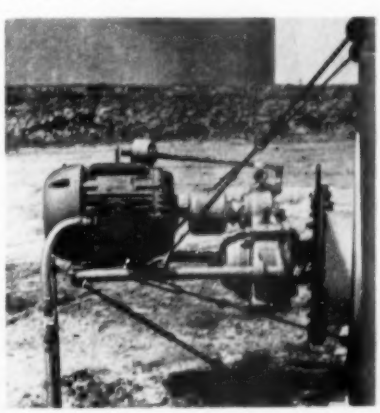


Saran-lined centrifugal pumping unit.

Sawyer-Jensen-Ross Co.
Tulsa, Okla.
5 Silver Lane

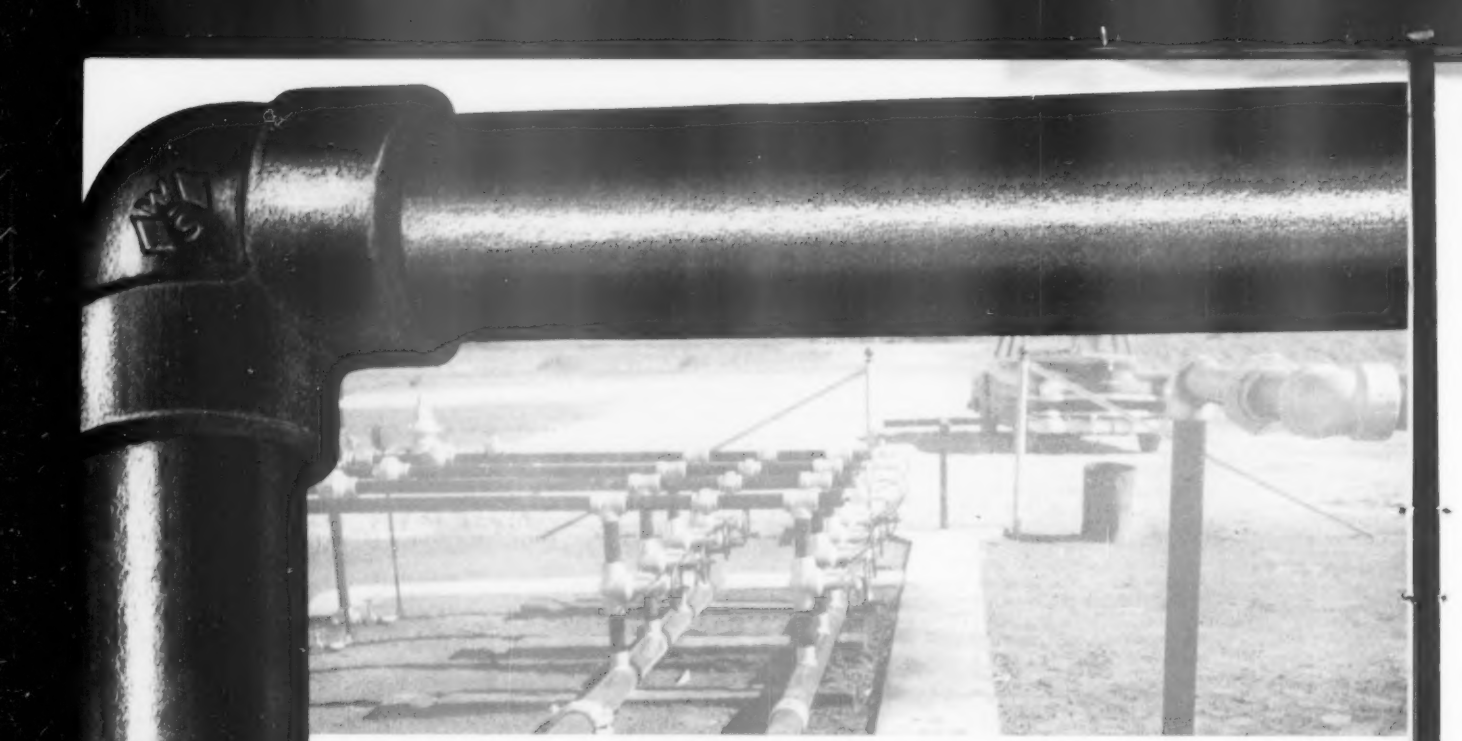
In attendance

J. L. JOPLIN, E. L. ROLFS, J. D. BRANCE, Peddlers, Inc.; W. L. SOMNERS, D. I. WINTERS, W. L. Somners Co.; MORVIN THOMAS, Morvin Thomas Co.; J. ARTHUR MOORE, J. Arthur Moore Co., and A. J. KERR, J. M. TILLMAN, Kerr Engineered Sales Co.



Sawyer-Jensen-Ross Shortstir mixer.

Shown at this exhibit is the "Shortstir" side-entering mixer developed for various applications in the petroleum industry. The mixers are applicable to pipe-line operations



STOP COSTLY PIPE-LINE FAILURES

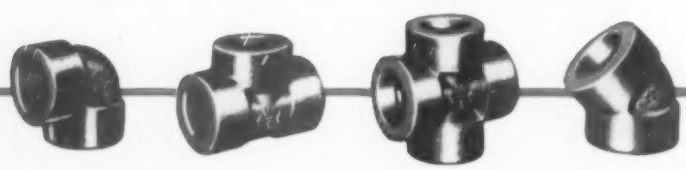
No one knows better than you the increasingly high cost of unscheduled outages due to pipe-joint failures. But do you know just how far it is possible to go toward *eliminating* such failures throughout the life of your piping systems? The answer to this critical problem is production and maintenance costs is FORGED STEEL FITTINGS by the pioneer firm of Watson-Stillman—consultants and suppliers to *all* major industries concerned with pipe joining and maintenance.

Watson-Stillman fittings are FORGED for maximum strength, toughness, and resistance to corrosion, vibration, and shock. More uniformly precise in all dimensions, they are the modern go-between whever pipes meet permanently.

Leading Refineries, Chemical Plants, Public Utilities, Refrigeration and Industrial Plants throughout the world stay on stream at lowest cost-per-year with the famous Double-Diamond Fittings by Watson-Stillman. Write for literature.

Screw-End and Socket-Weld Types

SOLD THROUGH LEADING DISTRIBUTORS



WATSON-STILLMAN FITTINGS DIVISION

H. K. PORTER COMPANY, INC.

126 ALDENE RD., ROSELLE, NEW JERSEY

9-0-5

for eliminating sediment accumulation in storage tanks and for gasoline blending and similar refinery operations.

Schlumberger Well Surveying Corp.
Houston, Tex.
Block 105

In attendance

C. K. RUDDICK, W. W. GOODE, R. R. RIEKE, C. R. EDGECOMB.

The MicroLog continuous dipmeter is one of the features of Schlumberger Well Surveying Corp.'s exhibit. This new, improved instrument is used to determine dip of strata in a single well bore by means of establishing a plane from three MicroLog curves 120° apart.

A new, expendable, shaped-charge gun is another feature of the exhibit. Developed for perforating casing below the tubing, the gun is designed to pass through tubing with a minimum of 2-in. inside diameter. The body of the gun is soft metal which is shattered by the explosion, the pieces dropping harmlessly to the bottom of the hole.

Schlumberger is displaying one of its complete multiple-service units, capable of performing any of Schlumberger's 25 electrical oil-well services. This unit is open for inspection.

Schneider Manufacturing Corp.
Muncie, Ind.
31N North Area

In attendance

A. G. SCHNEIDER, HEINRICH SCHNEIDER, JOHN R. CARDLE, P. R. YOUNGS, NICHOLAS A. D'ARCY, ROLLAND J. STILLWAGON, ROY STEVENTON, WILLIAM B. OSBORNE, HAROLD K. JOHNSON, HARRY M. FACKENTHAL, GEORGE BARBER.

This concern is exhibiting its torque converter showing the lock-up feature used in oil-well cementing rigs. In addition to this demonstration, the equipment is in actual operation at the exhibits of other companies. Schneider is also showing the component parts of its torque converter. Personnel are available at the exhibit to discuss torque-converter applications.

Schramm, Inc.
West Chester, Pa.
86N North Area and Block 207

In attendance

HAROLD J. SCHRAMM, F. H. WHARTON, GERALD M. MILLER, W. L. PRATT, ROBERT MARCH, F. ELTON WEIKEL, RAMON McCLUNG.

Schramm's exhibit includes a complete line of engine-driven compressors in sizes ranging from 20 to 600 cu. ft. per minute along with its Twin-Boom Drills, and pipe-boom tractor. Three Pneumatractors equipped with backhoe, front-end loader, along with a Sky-Worker, a Ka-Mo Auger, an Auburn Trencher, plus a complete line of construction tools and industrial compressors are also displayed.

Demonstrations of the Sky-Worker are made at Schramm's Block 207 location. At its 27 North Area location Schramm is showing a movie of its products serving in various oil-industry operations including exploratory drilling, production drilling, and pipe-line construction.

Schramm's Sky-Worker being used in tank painting.

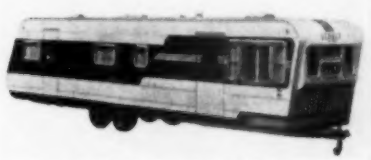
I.P.E. EXHIBIT DIRECTORY

Schult Corp.
Elkhart, Ind.
Block 208

In attendance

DON EIGLE, DON EIGLE CARTES, TOM CASEY, WARREN BLOSS, JOHN PIATT.

Three models of Schult's Dwellavan units being exhibited. Each of these three trailers has a different floor plan designed especially for oil-industry personnel, in both domestic and foreign service.



One of Schult Corp.'s Dwellavan units.

For Easier, Faster, Pipe Cutting & Beveling
Shape cutting Attachments for cutting the various shapes of pipe intersections.
Out-of-Round Attachment is used when pipe is out of round.
Economical...
With the economical H&M you can save up to half of the time and labor in cutting and beveling pipe. See the amazing H&M in our Booth at the International Petroleum Exposition, Tulsa, Oklahoma, May 14 to 23.
See for yourself. Let us arrange a demonstration.
H&M
PIPE BEVELING MACHINE COMPANY
311 E. 3rd St. Tulsa, Okla.
Phone 3-0241

I.P.E. EXHIBIT DIRECTORY

Scintilla Magneto Division
Bendix Aviation Corp.
Sidney, N. Y.
9-10 Oklahoma Building

In attendance

A. J. POOLE, SR., A. J. POOLE, JR., S. B. MERRITT, R. H. MURRAY, L. J. GARDAY, J. T. DAVIDSON, F. O. RETTBERG.

This exhibit features two Bendix-Scintilla magnetos which have been developed specifically for the higher-compression, large-type industrial engines now used by the oil industry. Also shown are other magneto and diesel-fuel injection equipment for industrial engines plus electrical connectors.

Bendix-Scintilla LC-magneto unit.

Scott-Rice Co.
Tulsa, Okla.
7-8 Oklahoma Building

This firm is featuring its map files which are made to fit entire safes, or portions of safes, including fire-resistant styles. The file tubes can be arranged to fit any desired space. They may be also built into custom-made wood cabinets finished to match executive office furnishings.

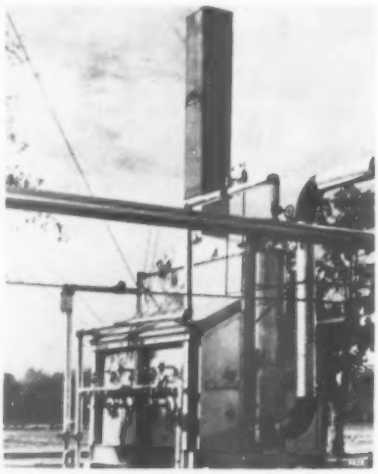
Scott-Rice Co.'s map file cabinet.

Selas Corp. of America
Philadelphia, Pa.
Block 205

In attendance

T. F. KREIPE, K. W. FLEISCHER, T. P. DRUMMOND, G. V. JORDAN, JR.

Featured is a model-size, tubular heater with eight burners arranged in two rows on each side, to show typical heat patterns and burning characteristics of Selas burners. A 2-in. coil installed between the burners is cooled with a continuous flow of low-pressure air. Although air only is used in the demonstration coil, an installation in refining or petrochemical process industries would have the air replaced by a regular charge stock.



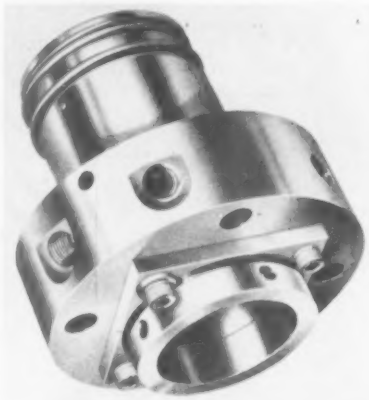
Process-heater installation equipped with Selas burners.

Sealol Corp.
Providence, R. I.
41 Silver Lane

In attendance

C. W. WILLIAMSON, R. E. BOUGHNER.

This company is exhibiting its line of shaft seals including stuffing-box assemblies for refinery, petrochemical, and pipe-line pumps. Featured is a working model showing the operating principal of this line of seals.



Sealol shaft seal.

Security Engineering Division
Dresser Operations, Inc.
Whittier, Calif.
Block 11

In attendance

OTTO HAMMER, KEN SWART, A. M. BIRNIE, HAL BENTSON, FRANK LEONIS, CECIL SCOTT, JACK STEWART, JOE BROWN, VERN MITCHELL, R. E. JONES, JIM SAYERS, R. O. CRAWFORD, BILL GALLMAN, C. A. STRAIGHT, L. D. GARNER, HOWARD FARMER, MARVIN GEARHART, BILL GARRET.

Highlighting the Security exhibit is a display of the company's new two-cutter and three-cutter rock bits, and new Neo-Red rubber stabilizer. On display also is Security's complete line of reamer and Cross-Section rock bits, plus hole openers, casing scrapers, and production tools.

A feature of the exhibit is a working model illustrating two drill collars, one with a stabilizer and one without. This exhibit demonstrates the effect of the collars working in the hole with and without proper stabilization.

Seismograph Drilling Supply Co.
Oklahoma City, Okla.
Block 104

Seismograph Service Corp.
Tulsa, Okla.
75-76 Scientific and Technical Building

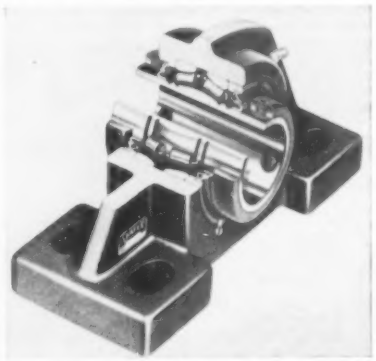
This oil-industry service organization's display features two large lucite semiglobes of each earth hemisphere on which locations of S.S.C.'s exploration crews, its district offices, and its subsidiary headquarters are pinpointed. Other information on the company's activities are also depicted.

Shafer Bearing Corp.
Downers Grove, Ill.
83-84 Texas Building, and 1-2 Scientific and Technical Building

In attendance

RAY TENNES, MONTY TENNES, HORACE TENNES, ARTHUR WILLIAMS.

Shafer Bearing Corp. is showing its ConCa-Vex bearing line. These bearings employ the principle of concave rollers rotating on spherical or convex races. Their self-aligning feature is demonstrated by a model showing a bent shaft rotating between two pillow blocks. Other industrial units, displayed in cutaway style, show the "Z" housing seal and 12-point adjustment features of the company's line of industrial mounted units. In addition to industrial bearings Shafer is displaying its line of aircraft bearings.



Heavy-duty Shafer pillow block with ConCa-Vex bearings.

Shaffer Tool Works
Brea, Calif
1-2 Oklahoma Building

In attendance

DON SHAFFER, ELVIN WILSON, SLIM COUNTS, NORMAN LEROY, GENE GREENWOOD, CARL VOGT, VIRGIL MOON, BILL YATES, CLAY FRY, RAY THOMPSON, LEE CHISHOLM, ART WILDE, FRANK SCHWEITZER, BILL GIBSON, ROGER PETERSON, ROSS McCLINTOCK, JEFF MUSOLF.

Shaffer Tool Works, manufacturers of high-pressure drilling and control equipment, is presenting a display made up of its newest equipment. Nearly all of the Shaffer equipment is in operation.

The display includes Shaffer's hydraulic gate, plus pumps, and the complete control system for operating the gate. Shaffer products are also on display at drilling-rig locations of other exhibitors. A rotating blowout preventer is also shown at Shaffer's location and similar equipment is in operation at another exhibit.

Miniature models of Shaffer's new bumper safety joint and its new jar safety joint are also being shown. Other items included are production heads and a new Shaffer kelly cock.

Shamrock Reconditioners
Wichita, Kans.
27 Oklahoma Building

In attendance

KENNETH L. KRIEG, JAMES G. KRIEG, JAMES GILLIAM, C. A. VAN NATTA, WAYNE KRIEG.

This oil-industry service company applies protective coatings to oil-field equipment. Shamrock Reconditioners extends its service to include a wide variety of items in which are tanks, pipe, and sucker rods. In addition the company manufactures a plastic vent valve. Technicians are available at the exhibit to discuss the company's services and products.

Sheffield Steel Corp.
Kansas City, Mo.
East of Block R

In attendance

C. E. MOORE, J. K. RIDGE, W. S. NEWELL, J. R. McALPIN, W. A. RHEINHOLD.

This subsidiary of Armco Steel Corp. is exhibiting some of its products with the parent company and other subsidiaries. Being shown are tank heads for L.P.-gas containers, structural shapes, bolts and rivets, and special alloy steels for rock drills, springs and other uses.

Shell Oil Co.
Tulsa, Okla.
240 Oklahoma Building

Sherman Products, Inc.
Royal Oak, Mich.
Block 207

In attendance

CHARLES L. STONE, KENNETH MERCER, WILLIAM W. WIGLE, KENNETH VAN LEEUWEN, EDWARD W. BREHM, JR., WILLIAM F. BECKHAM, ROBERT W. HUMES.

The exhibit of Sherman Products, Inc., consists primarily of its Power Digger mounted on a rubber-tired tractor. Featured are bell-

Sherman Products' bell-hole shovel unit.

hole-type shovels which adapt the Sherman Power Digger to stripping and bell-hole work. Also shown is the new Sherman Industrial trailer.

Shrimpton Manufacturing & Supply Co.
Los Angeles, Calif.
Adjacent Scientific and Technical Building

In attendance

D. J. SHRIMPTON, R. H. WOODWARD, JR., W. E. HANSEN, B. P. GOAN.

(For description of exhibits, see Minneapolis-Moline Co.)

Skelly Oil Co.
Kansas City, Mo.
3-4-5-6 Kansas Building

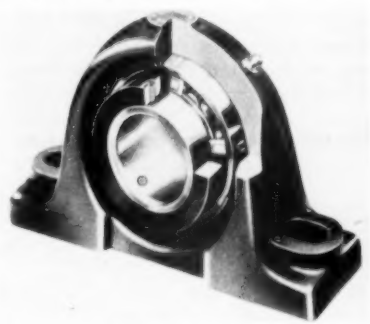
S K F Industries, Inc.
Philadelphia, Pa.
67-68 Texas Building

In attendance

E. H. WAGNER, S. H. SMITH, A. S. MURRAY, H. L. GADDIS, W. F. WEIDNER, O. NEUMER, H. W. DEUTSCH, R. M. BRUCE, L. MELNYK, P. J. WINFIELD.

S K F is displaying its complete line of antifriction bearings and pillow blocks. Featured in the exhibit is the Hess-Bright pillow block, the latest addition to this company's line.

Also on exhibit is a display showing mounting and dismounting of bearings by means of hydraulic pressure.



SKF pillow block.

Skinner Brothers Co.
Tulsa, Okla.
239 Oklahoma Building

In attendance

R. W. KUTTER, C. T. McGILL, T. R. DAVIS, D. O. COLLINS, E. J. LITTLE, M. H. LACY, J. L. PUGH, E. B. SMITH, E. T. SKINNER, F. B. SKINNER, W. W. SKINNER, R. W. SKINNER, P. B. SKINNER, R. E. LAVERY, H. A. SCHILLINGER, L. L. ROGERS.

This display is made up of complete wellhead hookups of Skinner Brothers Co.'s stuffing boxes, wobblers, oil savers, lubricators, swabs, and pumping tees. Some of these items are cutaways.

A. O. Smith Corp.
Milwaukee, Wis.
143-148 and 183-188 Oklahoma Building

In attendance

RUSSELL IRISH, WARREN HENDRICKSEN, W. D. WOOD, GEORGE HOUGH, W. C. POWELL, S. V. WILLIAMS, L. M. KEATING, E. H. LINDSAY, WILLIAM ASHER, K. L. CAMP, WAYNE BURLESON, GEORGE KEMPER, FRANK ROWE, L. F. MEGOW, C. R. RIGBY, J. W. HARRIS, B. C. HEALD, J. H. SICKLER, W. G. MOSER, T. H. PITZER, J. D. KELLY, A. E. BUTTS, HARRY BRILL, DENNIS F. McCARTHY, T. H. CREEDEN, WALTER GRAHAM, H. F. DETRICK, J. H. BRINKER.

I.P.E. EXHIBIT DIRECTORY

Animated displays of individual products are the focal points of A. O. Smith Corp.'s exhibit. Equipment displayed includes oil-well casing, oil and gas line pipe, meters, L.P.-gas systems, welding equipment, steel vessels, and heat exchangers, along with glass-lined tanks for the petrochemical industries, plus vertical turbine pumps, safety grating and stair treads, and motors. Other items in the Smithway line are also exhibited.

S. Morgan Smith Co.
York, Pa.
61-62 North Area

In attendance

CARL J. WILCOX, HARRY E. SHIVE, WM. McEACHERN, RICHARD L. SPENCE, C. W. LAU, J. H. WHISLER, DAVID W. HOPKINS.

This company, along with its subsidiary R-S Products Co., is showing a 10-in., 600 series Rotovalve and a butterfly valve. Technicians are on hand to discuss application of these items along with the other products manufactured by these companies.

Smith Welding Equipment Corp.
Minneapolis, Minn.
132-133 Kansas Building

In attendance

L. A. THESENGA, H. E. VANDER LINDEN, W. C. PARKINSON, N. N. CANFIELD.

Exhibit includes demonstrations of company's line of oxyacetylene welding and cutting torches and torches for special usage. A display features Smith's welding tip that may be rotated 360° even while producing flame.

Solar Aircraft Co.
San Diego, Calif.
Block 205

In attendance

P. L. WARD, F. C. HEINIG, W. P. HENRY, E. H. SEIBOLD, R. W. BOURNE, M. P. ROPE, B. K. TICE, J. M. SAYRE.

New stainless alloy products for the oil and petrochemical industries are exhibited by Solar Aircraft Co. Included is the first public demonstration of Solar's small gas turbines in action. The world's first portable, hand-started, gas-turbine-powered fire pump is in operation pumping water.

Other highlights of Solar's display are: New types of stainless alloy bellows and industrial expansion joints, designed for a variety of uses in process industries, and Solaramic, high-temperature ceramic coatings which are used to protect metals against corrosion.

The first shell-mold, stainless-alloy castings in production on the West Coast, a new technique of making castings that produce low-cost parts of high quality, are also shown.

Solar Aircraft Co.'s portable gas-turbine power plant.

IF IT'S POWER YOU WANT.... ...Specify

the WILSON-SNYDER NO. 220-P SLUSH PUMP

Here is a Power Slush Pump built for the heavy duty work that present drilling demands. It has greater capacity and greater horsepower.

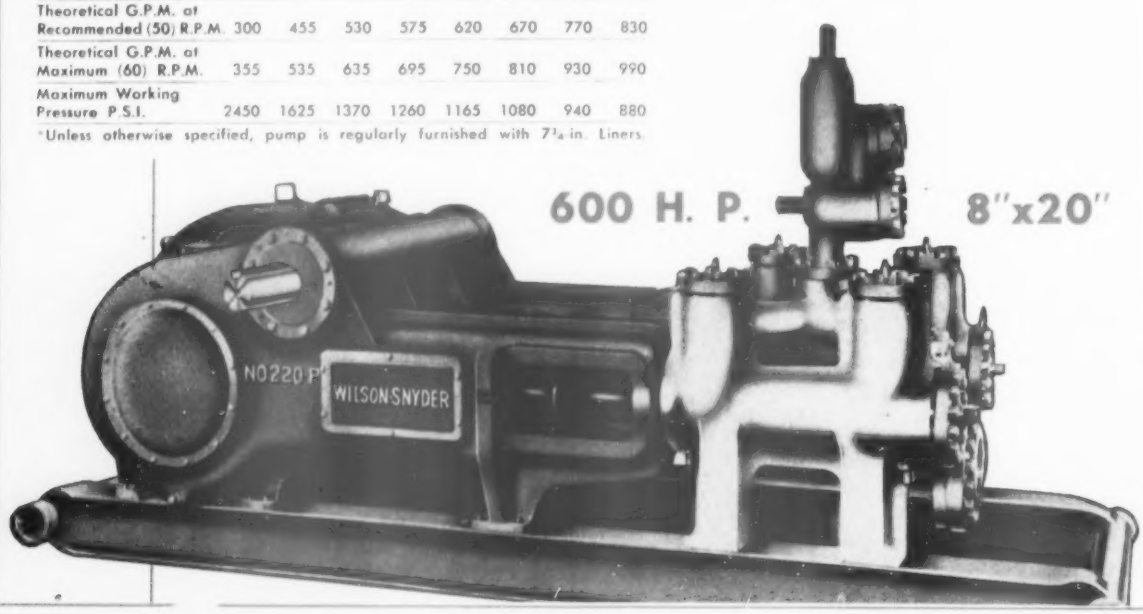
Naturally it is larger and more powerful.

Some of the many Wilson-Snyder features found in the No. 220-P are: (1) single helical gears with shafts set in adjustable tapered roller bearings, (2) oil bath lubrication, (3) grease lubricated crosshead pin bearings, permitting lubrication without shutting down, (4) special arrangements of the diaphragm packing and the mud baffle, (5) deep stuffing boxes, designed for rod lubrication, (6) Di-Hard Liners with Tell-Tale Liner Packing and Heavy Duty Liner Spacers with outside adjustment, (7) Heavy Duty Fluid Valves.

Displacement (Rod Deducted) and Pressure Range

Available Liner Sizes	5 in	6 in	6½ in	6¾ in	7 in	7¼ in	7¾ in	*8 in
Theoretical G.P.M. at Recommended (50) R.P.M.	300	455	530	575	620	670	770	830
Theoretical G.P.M. at Maximum (60) R.P.M.	355	535	635	695	750	810	930	990
Maximum Working Pressure P.S.I.	2450	1625	1370	1260	1165	1080	940	880

*Unless otherwise specified, pump is regularly furnished with 7¼ in. Liners.



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1301 Conti St. (Cor. of Walnut)
HOUSTON, TEXAS

SALES OFFICES

Tulsa
Dallas
Shreveport
New Orleans

South Bend Lathe Works
South Bend, Ind.
66 Scientific and Technical Building
In attendance
H. I. SWARTZ, G. A. SPORRE, C. R. SMITH.

This company is displaying its South Bend Lathe line of precision machine tools. Featured is South Bend's 16-in. Toolroom lathe designed to handle emergency repair jobs.

A 14-in. floor drill press is on exhibit along with a 7-in. bench shaper. Rounding out the South Bend exhibit is a new pedestal tool grinder, introduced early this year.

South Bend Lathe Works new 14-in. bench drill press.

Southern Express, Inc.
Dallas, Tex.
Adjacent to Office Building, West Area

Southern Mill & Manufacturing Co.
Tulsa, Okla.
Block 114
In attendance
R. E. AHRENS, E. W. SPEARS, H. A. TUCKER, BERNARD SOERRIES, J. P. GWIN, J. W. FELLERS, W. F. WALKER, GLENN COCHRAN, R. A. SNELSON, J. A. FISH, C. M. VAN FOSSEN, GEORGE W. SPRINKLE, GEORGE GARLAND.

Southern Mill is showing for the first time its new Sturdybilt prefabricated oil-field house. In keeping with city homes built today, the house is constructed along modern lines. It incorporates large living and dining areas, two bedrooms, and den or all-purpose room. The kitchen is equipped with the latest Curtis cabinets and built-ins. The house, as built for this exhibit, has a car port.

South West Box Co.
Sand Springs, Okla.
18 Kansas Building
In attendance
W. F. LAGRONE, R. J. KENNEDY, H. B. GALE, M. F. BEATTY, L. L. NARWOOD, R. P. LASTER, S. J. JONES, MARVIN CATRON.

This company, makers of corrugated containers, is showing a variety of its products for the oil industry.

Southwestern Bell Telephone Co.
Tulsa, Okla.
Block 206

Southwestern Bell Telephone Co.'s exhibit shows the part its services play in the petroleum industry. Featured is a 16-ft. animated display including a complete model layout of a typical pipe-line system, refineries, and distribution network to market areas.

A second display demonstrates an alarm system used in Bell microwave systems to warn of equipment failure at distant unattended relay stations and provide means for controlling the operation of certain relay station apparatus.

Southwestern Engineering & Equipment Co.
Dallas, Tex.
7 Scientific and Technical Building

Southwestern Engineering & Equipment Co. is direct agent in West Texas and New Mexico for the following firms:

Ampex Electric Corp., Redwood City, Calif., producers of tape recorders.

Edin Co., Worcester, Mass., manufacturers of ink-writing recorders.

American Instrument Co., Silver Spring, Md., manufacturers of a line of laboratory instrumentation apparatus as well as "Superpressure" valves, fittings, tubing, reaction vessels, and similar equipment for operation up to 100,000 psi.

Radioactive Products, Inc., Detroit, makers of survey meters, neutron dosimeters.

Tinius Olsen Testing Machine Co., Willow Grove, Pa., manufacturers of universal-type testing machines for tension, compression, shear, torsion, measurements.

Sparkler Manufacturing Co., Mundelein, Ill., producers of liquid filters for refineries, and other processing operations.

Leslie Regulator Co., Lyndhurst, N. J., makers of automatic control valves.

Dyna-Labs, Inc., Garden City, L. I., N. Y., maker of the Gaussmeter.

Displayed are products of most of these firms.

Southwestern Industrial Electronics Co.
Houston, Tex.
52N-53N North Area
In attendance
KEITH R. BEEMAN, RICHARD H. PARKER, PAUL W. GEERY, W. H. O'CONNOR, HARRY GIRARD, R. M. STONEHALE, PAT McGREW, RICHARD A. HERROD, LOUIS W. ERATH.

Shown at this exhibit is a complete 48-trace set of portable seismograph instruments, including trucks and associated equipment.

Spang & Co.
Butler, Pa.
44-45 and 60-61 California Building
In attendance
F. J. SPANG, F. E. RATH, GEORGE FISH, O. B. PIERCE, F. J. RIPPER, FRANK YOUNG, BYRON B. NULL, HARRY L. TAYLOR.

A scale model of a 48-in. reamer-type pilot bit, of the kind used for the drilling of mine vents and escape shafts, is the feature of this exhibit.

Spang, manufacturer of cable-drilling and fishing tools, is showing various other items of equipment such as boxes and pins, rope sockets, Spang weldless jars, carbon and alloy steel drilling bits, and a 9-in. "blast-hole" bit.

Sparkler Manufacturing Co.
Mundelein, Ill.
14 Scientific and Technical Building

Spartan Aircraft Co.
Tulsa, Okla.
Block 119
In attendance
GEORGE F. GETTY II, SR., E. H. GUBSER, W. H. SHELTON, R. E. McMACKIN, J. E. HENDRICKS.

Spartan is displaying its trailers and mobile homes. These units are designed for oil and drilling-company personnel, exploration crews, and similar oil-industry operating personnel. In addition to living quarters, the mobile units are adaptable to housing for experimental laboraty operations in the field. Along with these uses, these mobile units may be used as demonstration displays. Spartan's exhibit includes a demonstration-display unit of this type. Also shown is an Imperial Mansion shell showing aircraft-type, all-riveted construction. In addition, a completed Imperial Mansion is shown fully equipped.

Specialty Sales & Service, Inc.
Tulsa, Okla.
12-16 Kansas Building
In attendance
M. L. WALRAVEN, JR., H. W. WOOD, Specialty Sales and Service, Inc.; D. G. COLONY, GEORGE W. ELDRIDGE, Manton Gaulin Manufacturing Co., Inc.

This company is showing the Gaulin high-pressure pump, newly adapted for use in various phases of oil production. This triplex unit is adaptable to production operations including water flooding and salt-water disposal. Specialty is also showing its new high-pressure metering manifold which is designed to control flow of operating fluid to each well in multiple-well hydraulic pumping system. In addition is shown the company's bottom-hole separator.

Gaulin Triplex pumping unit.

Specialty Shooting Co.
Monahans, Tex.
Block 204
In attendance
LEE McKINNEY, JESSE RUSSELL, R. L. FLORENCE, J. E. RAPP.

Two nitroglycerin-shooting trucks plus a display board showing the various items commonly used while shooting oil and gas wells are exhibited. The two trucks displayed are completely different. One is designed for use in the San Juan basin of New Mexico and the other for use in West Texas and southwestern New Mexico.

One of eight shooting trucks operated by Specialty Shooting Co.

Sperry Products, Inc.
Danbury, Conn.
11 Park Lane
In attendance
JOHN C. SMACK, DWIGHT J. EVANS, W. C. MINTON, RALPH H. FRANK.

This exhibit features ultrasonic inspection

It's New...It's Flexible...

STRATOLINE...

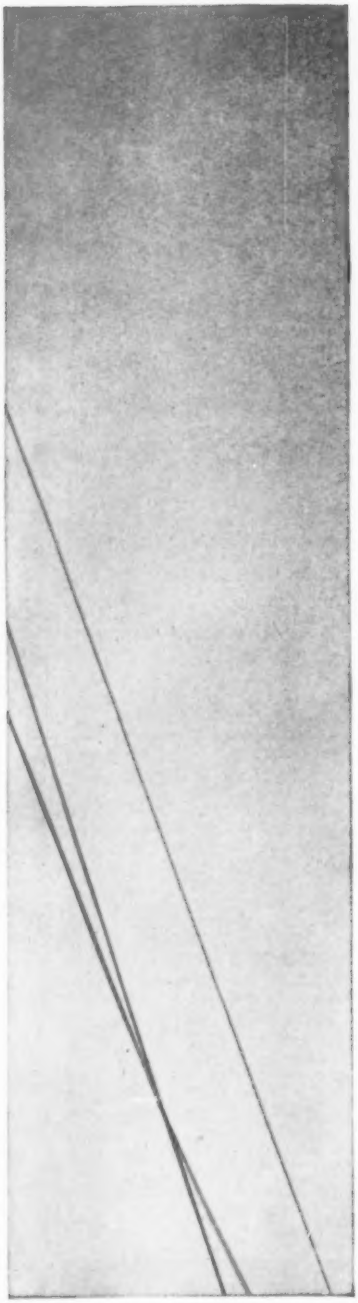
The Most Streamlined Coupling Ever Made

The new Hewitt-Robins Stratoline Coupling embodies the *strongest, smoothest construction by far ever used on any rotary drilling hose.* This new coupling, with API line pipe threads, is no bigger in diameter than the hose itself—has no protruding parts—is absolutely snag-proof, leakproof, easier to use, saves handling time.

HEWITT-ROBINS

EXECUTIVE OFFICES, STAMFORD, CONNECTICUT

It's Stronger...It's Safer



The New Hewitt-Robins Cable-Reinforced Rotary Drilling Hose with the Exclusive Streamlined Stratoline Coupling and Built-in Safety Eye

Feature for feature, the new Hewitt-Robins Cable-Reinforced Rotary Drilling Hose with the exclusive Stratoline Coupling meets the most exacting requirements. This new rotary drilling hose is unequalled for safe, dependable, long-life performance and handling ease on any type of rotary drilling rig.

ENGINEERING DATA

CONSTRUCTION: High-tensile airplane cable wire spiraled on, right hand and left hand to equalize tension and control elongation. Third cable coiled on to eliminate dancing and shimmying . . . Has strength to match highest operating pressures—flexibility to drape smoothly on any type of rig.

TUBE: Neoprene-base synthetic compound meets all current operating requirements, including high mud temperatures, oil-based mud and oil emulsions.

COVER: Neoprene-base synthetic compound—resists oil, sun-checking, strain crack, cutting abrasion, weather and temperature extremes. Black with longitudinal yellow stripe to ease alignment.

SAFETY EYE: Permanently fused to hose body 29" from threaded end of coupling at each end of hose for attaching safety chain to derrick and swivel—eliminates need for external clamps.

See this new hose in action featured on the Wilson Manufacturing Company's new, double trailer, giant rig, and be sure to visit our hose display at the Mid-Continent Supply Company's Building at the International Petroleum Exhibit.

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of pipe, couplings, forging, and other materials for internal defects by the Sperry Ultrasonic Reflectoscope method. This instrument is used for locating various types of internal discontinuities such as inclusions, segregations, cracks, laps, folds, porosity, fatigue cracks, and the like which may affect the ultimate use of the particular mterial. Also on exhibit is a complete production-testing setup for ultrasonic inspection of pipe couplings. The machine was designed and manufactured by Wheeling Machine Products Co., for use with the Reflectoscope and is used by that company for inspection of its pipe-coupling products. In the oil industry, ultrasonic inspection is applied to pipe couplings, shafts, welds, drill pipe, and other oil-field and refinery equipment.

Sperry-Sun Well Surveying Co.
Houston, Tex.
82 Scientific and Technical Building

In attendance
E. J. BLACKBURN, J. B. PEDDY, J. B. EVANS, W. F. KRUEGER.

New products displayed by Sperry-Sun include its subsurface water-injection pump for water-flooding service. The pump provides a completely closed system, accomplished by means of a special jacket and a standard rod-and-tubing pump. The equipment permists calculation of water-injection rates, minimizes well-conversion costs, and eliminates the need of dual packer settings. The pump provides surface working pressure without raising source water to the surface. Also displayed are the Telefloodmeter and application of the Sperry-Sun E-C Inclinometer and single-shot instruments to crooked-hole measurements. Displayed in addition is Sperry-Sun's magnetic multishot survey service which provides inclination and direction readings at regular intervals in uncased holes. Recordings are made photographically on a film strip and are read by means of a special device.

Spurlin Sales Co.
El Reno, Okla.
Block 203

In attendance
L. A. SPURLIN, A. D. SPURLIN, D. E. MOORE.

Spurlin Sales Co. and Earth Equipment Corp., coexhibitors, are showing the Everett Trencher, the McGee Angle Dozer, and McGee Scraper. For equipment being exhibited, see Earth Equipment Corp.

McGee scraper, Model M9, attached to a Ferguson "30."

Stardrill-Keystone Co.
Beaver Falls, Pa.
Block 201

In attendance
H. J. RUTTENBURG, H. J. ALLEN, I. E. WILD, G. A. McGREW, F. R. STUBEN, L. S. COBURN, E. J. YELLIG, D. W. WILCOX, T. F. AHLERS, E. C. HAWKINS, C. M. REED, FRANK GRAHAM.

This company is showing its combination drilling machine designed for cleanout, swabbing, and water-flood work. Hole-diameter capacities range from 6 to 20 in. using suitable sizes of drill rods and mud pumps. With rotary attachment the machine handles 1,500 ft. of 2⅜-in. drill pipe, 1,050 ft. of 2⅞-in., and 800 ft. of 3½-in. drill pipe.

Stardrill-Keystone Co.'s 72 Speed Star combination unit.

L. S. Starrett Co.
Athol, Mass.
52-53 Kansas Building

In attendance
W. W. HASKINS, A. W. SMITH, J. R. BOEHM, L. E. GIBSON, H. C. SHERWOOD.

Exhibited is Starrett's line of gaging tapes and accessories along with its line of hand

Starrett's gaging tape.

measuring tools, precision instruments, dial indicators, hacksaws, band saws and band knives, and precision-ground flat stock.

Stentz Equipment Co.
Tulsa, Okla.
81-87 Kansas Building

Various items in its Seco line are displayed by Stentz Equipment Co. Included in the group are self-priming and straight centrifugal pumps along with indirect treaters for handling corrosive emulsions and which utilize

Seco pumping unit.

National Radiator cast-iron sections as heat exchangers.

In addition, automatic tank shutoff valves are displayed. These valves are used in pipeline gathering systems for elimination of air and vapor locks. When used with the Seco automatic shutdown switch, this valve provides automatic operation of gathering systems. Also shown are Seco automatic fire-protection systems for any type operation from drilling rig to an entire refinery.

Augmenting the Seco equipment display are centrifugal, rotary, screw, and piston-type pumps for all industrial applications, plus hose, fittings, and allied equipment required for complete fire-protection installations. Manufacturers of these items are represented by Stentz Equipment Co.

Sterling Packing & Gasket Co., Inc.
Houston, Tex.
63 Kansas Building

In attendance
C. L. FENITY, JR., LEO WHITSON, EDDIE GREBE, JOE DANNENBAUM, CARL PALMQUIST, CHARLIE FAY, REGINALD WARD, FRANK BROADWAY, PAUL NORDSTROM.

Sterling is featuring its line of metal gaskets. Included are its heat-exchanger-type gaskets for refineries, and petrochemical and gasoline plants, as well as specialty rod packing, such as molded and extruded Teflon for highly corrosive services, plus plastic packing for butane, propane, and other light hydrocarbons, along with Sterling's latest specialty fabric and synthetic molded items.

Stewart & Stevenson Services
Houston, Tex.
Block V

In attendance
DONALD STEVENSON, JOE MANNING, N. J. HERMAN, KING D. BOYD, H. A. TROTTER, R. N. CONOLLY, N. N. ELKINS, CARSEY MANNING, ED WOMBLE, E. E. CHILDRESS, JOE RUCKER, JIM BROWN, W. E. RUTLEDGE, L. L. HOWELL, BROOKS HERRING, CHRIS PRATAS.

Included in this exhibit is a Stewart &

Model 20 DA all-electric unit generator, welder, air compressor, and washdown pump.

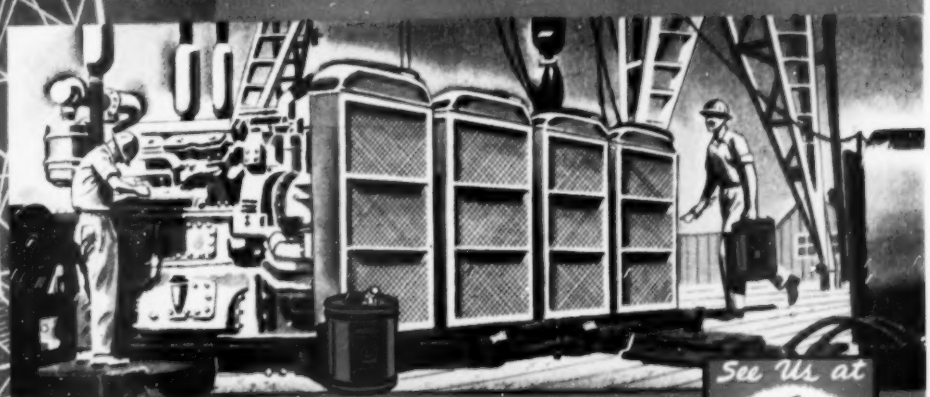
MARVEL *mystery oil*

keeps *"down-time"* Down.. machine efficiency UP!

We don't have to tell *you* the beating machines take in the oil fields. Constant operation—with dust, sand, rust, sludge, varnish, gum and goo literally eating away at the guts of engines—can sure cause slowdowns and finally breakdowns—unless an extra-fine lubricant is used.

That extra-fine lubricant is MARVEL MYSTERY OIL

Marvel is a light-weight, high film strength oil specially developed for use under extreme heats of internal combustion engine cylinders. It is unsurpassed as a general lubricant on every bearing part of all machines used in oil drilling today. Lubricates valves, pistons, rings, critical upper cylinder walls. Combats internal motor rust and corrosion. Dissipates motor varnish, sludge, gum. Marvel makes machines stay at the job longer . . . at greater operating efficiency . . . less costly maintenance "down time" stoppages and repairs than any other lubricant on the market today.



For more information, write:
EMEROL MANUFACTURING COMPANY, INC.
Department 300
242 West 55th Street, New York 23, N. Y.

See Us at
TULSA MAY 14-23

Stevenson oil-field utility unit and rig-lighting plant which furnishes power for lighting the exhibit. Also displayed is a Climax Blue Streak oil-field power unit along with a Chrysler Quad oil-field power unit consisting of four industrial engines, operating through fluid couplings and power-transfer gears to a common drive shaft.

Stewart-Warner Corp.
Alemite Division
Chicago, Ill.
57N-58N North Area

In attendance
GUS TREFFEISEN, E. RALPH HARRIS, RICHARD ROE, TOM MURPHY.

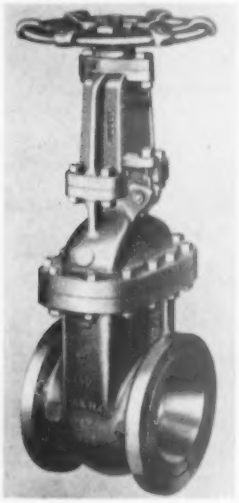
Alemite Division is showing its Triple Check fittings, a new item, especially designed for use on lubricated plug valves and other applications having extremely high back pressures. In addition are displayed Alemite Oil-Mist lubricating devices and Accumeter centralized lubrication systems along with hand guns and fittings.

St. Louis Cordage Mills
St. Louis, Mo.
89 Texas Building

Stockham Valves & Fittings Co.
Birmingham, Ala.
47N-48N North Area

In attendance
C. H. DENICKE, GERMER PETESCH, F. H. BURKS, S. J. POSS, JR., Stockham Valves & Fittings; and W. E. JONES, H. C. STOCKHAM, JR., WARREN N. PETRIE, Wedgeplug Valve Co., a Stockham affiliate.

Coincident with its golden anniversary, Stockham is introducing to the petroleum industry its new line of steel gate valves. These 150 and 300-lb. gate valves, together with the "Wedgeplug" dry-plug valve, are featured



Stockham 150-lb. steel gate valve.

at the exhibit. Also shown is the company's complete line of bronze and iron body valves along with its cast-iron and malleable pipe fittings.

Stratoflex, Inc.
Fort Worth, Tex.
97-98 Texas Building

In attendance
W. R. COOK, S. R. BILLINGSLEY, H. W. PRIEST, H. E. LAGRONE, B. L. MATHESON, R. H. MAXWELL.

Display of Statoflex fittings.

Stratoflex, Inc., manufacturers of detachable, reusable fittings and flexible hose assemblies, is showing its line of products. Featured is a display board showing the various sizes and types of hose and fittings used by the petroleum industry. Cutaway models show operating principles of Stratoflex fittings. Also displayed is a test stand for hydraulically testing hose and hose fittings.

Subsurface Engineering Co.
Tulsa, Okla.
23 Scientific and Technical Building

In attendance
FRANK PURDUM, C. C. WILSON, DON CLAPSADDLE, BOB BELLAMY, LOUIS PICARD, R. M. ANDERSON, KENNETH BABCOCK, G. W. TAYLOR, FRANK LEINWEBER, HAROLD HENSLEY, REX SHEARER, RAY CRAIG.

Subsurface Engineering Co., a service organization, is displaying curves and descriptive matter outlining field tests, showing by graphs and tabulations results obtained by these tests. Important elements of the reports are shown by tabulations worked up from the field data and by graphs.

Results reported are shown for static and flowing bottom-hole-pressure tests, and productivity index, draw down, build up, valve check and packer-leak tests. Also open-flow capacity, back-pressure tests, plug temperature surveys to locate top of cement behind casing, and temperature surveys to locate leaks, and gas-oil-ratio test.

Superior Welding & Machine Co.
Bartlesville, Okla.
82N North Area

Synchro-Start Products, Inc.
Skokie, Ill.
3-4 Scientific and Technical Building

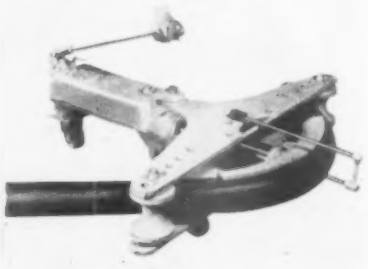
In attendance
WILLIAM J. WILLIAMS, WILLIAM L. STELTER, C. M. DABROHUA.

The exhibit of Synchro-Start Products, Inc., depicts an oil field with electric-motor-driven pumps, using commercial electric power, backed up by a "standby" power plant in case of commercial power failure. The animated display operates to illustrate how a standby power source equipped with Synchro-Start automatic controls instantly takes over the load to keep the pumps running until the power-failure emergency is ended.

Tal Bender, Inc.
Milwaukee, Wis.
27 Scientific and Techaical Building

In attendance
E. T. TAL, E. S. BAILEY.

Five different machines are shown. These are a radiant-heat bender, a larger copper-tube bender, a hand-operated pipe bender, and small-size tube bender. The featured machine is the company's 4-in. unit, which readily handles extra-heavy pipe or rigid conduit from ⅜-in. to 4-in. and produces smooth bends, free from distortion, in one setting. With the new electric-motor pump connected to this unit, bends can be made in only 5 minutes. Changeover from one pipe size to another takes just a few seconds. The machine is mounted on casters and can be easily set up for on the spot installation and repair.



This hand-powered pipe bender produces 90° smooth bends in 4-in. pipe with one setting.

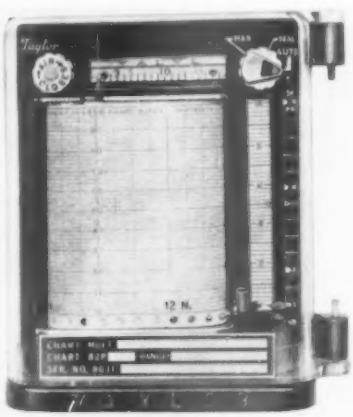
Taylor Instrument Companies
Rochester, N. Y.
31-32, and 87 Scientific and Technical Building

In attendance
A. J. FLEIG, G. E. HOWARD, R. N. POND, R. VANDECARR, W. J. BERK, J. E. PHILPOT, A. J. FINK, R. E. FLIKKEMA, J. C. LALEY, B. W. LARSON, D. E. SULLINS.

Manufacturers of instruments for indicating, recording, and controlling temperature, pressure, flow, liquid level, specific gravity, and the like, Taylor Instrument Companies' exhibit displays, by pictorial animation, applications of these instruments. Taylor's new Transaire differential pressure transmitter is beaing featured.

A 10-ft. animated panel displays graphically instrumentation of a gasoline plant—both miniature and conventional. Another panel demonstrates the Transaire temperature transmitter. One of the highlights of the exhibit is Taylor's recently designed plug-in Transet recorder receiver, a new idea in panel instrumenttation.

Other equipment displayed are flow meters, mercury manometers, industrial and etched-stem thermometers, and Fulscope controllers.



Taylor's new plug-in type receiver for panel mounting.

Technical Oil Tool Corp.
Los Angeles, Calif.
192-193 Oklahoma Building

In attendance
J. B. WOOD, H. H. PETERS, E. G. McCONNELL, O. SUTER, RALPH PIERCE, E. E. WILLIAMS.

The Totco exhibit features its new Double Recorder, a mechanical, self-checking drift indicator. An animated display, operating

WHITMOR

America's most popular field home

See it on display just a block from the Oil Show Grounds..

In addition to our booth at 35 Park Lane where we will have photographic exhibits of completed projects in fourteen states, Whitmor Homebuilders, Inc. has erected a completely air-conditioned replica of our "Osage" Model field home at 4142 East 21st Place—only a block from the Oil Show Grounds. This model home will be completely finished with the exception of one of the bedrooms where all structural members, including flooring, joists, rafters, studs and insulation will be exposed. This will show the high quality of Whitmor construction.

✱ Visit our booth—a representative will be happy to show you this popular field home.

WHITMOR HOMEBUILDERS INC.

Originators of the Lease-Rental Plan

INDUSTRIAL HOUSING | THE FINEST IN THE FIELD

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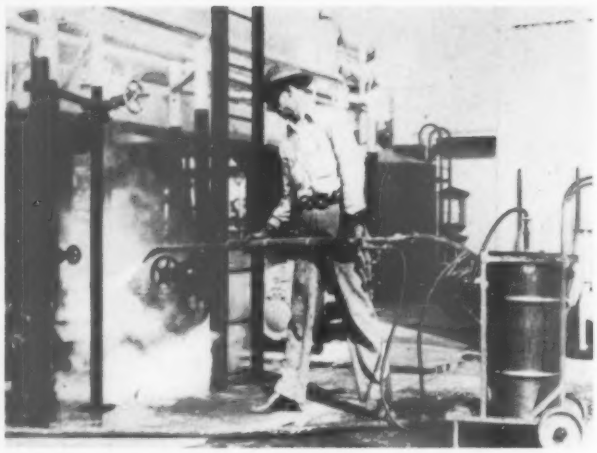
Throughout the land Shafer Roller Bearings are increasing the nation's productive capacity—carrying big loads, saving money and power, reducing down time and maintenance costs wherever America's heaviest duty power transmission equipment is at work.

Shafer Bearings handle these tough jobs better because they are engineered to-the-job—to provide *longer* life, *greater* dependability and *lower* operating costs under the severest working conditions. Integrally self-aligned, they have full radial-thrust and greater reserve shock load capacities under all conditions of misalignment; are equipped with self-centering "Z" housing seals and Micro-Lock 12-point adjustment. See the Shafer bearing specialist near you . . . or write us direct . . . for complete information and engineering consul on a no-obligation basis. SHAFER BEARING CORPORATION, 801 Burlington Avenue, Downers Grove, Illinois.

SHAFER
SELF-ALIGNING
ROLLER BEARINGS

VISIT US AT THE OIL SHOW—BOOTHS 83 AND 84.



Cleaning Maintenance Cut from Days to Hours at Western Refinery

Refinery finds Oakite Detergent applied with Oakite Steam Gun makes short work of cleaning prior to repainting.

THE cleaning problem this California refinery had was simple enough. It was one of removing all dirt, grease and muck from tanks, pumps and similar equipment. But actually doing the job was not so simple. It meant tedious scraping, wirebrushing, wiping by a sizable crew. It involved struggling with hard-to-get-at surfaces. Did the Oakite Man have a better answer?

He did—as a result of his wide refinery cleaning experience. For this particular case, he suggested the Oakite 384 Steam Gun. He helped Maintenance get started that morning. By afternoon, the plant superintendent stated, "One man did about two weeks' work today".

Proving that—
in industrial cleaning it always pays to consult Oakite.

YOUR OAKITE TECHNICAL SERVICE REPRESENTATIVE—His experience is yours to draw on. He knows "cleaning engineering" and the conditions under which refinery cleaning can be best performed. His responsibility only *begins* when you order materials. He keeps in touch with you. He sees to it that the job is done right the first time, at lowest cost. Call him in . . . no obligation.

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Full of helpful information on jobs such as:

Drum reconditioning • **Descaling**
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Technical Service Representatives in Principal Cities of U. S. & Canada

continuously, explains the operation of this indicator.

Two other new products the Directional Recorder, a new mechanical, double-checking directional, single-shot unit and, the Initial Boiling Point Recorder for light hydrocarbons are being demonstrated. The Initial Boiling Point Recorder maintains a current record of the initial boiling point of a material as it is being produced by a refining or other process.

In addition to these new items, Totco will exhibit its Chronometric tachometers, Flash-Tronic batteryless synchronizers, the Auto-Clip applier and Auto-Clips, plus a number of products manufacturered for the national defense program.

Technical Training Aids, Inc.
Tulsa, Okla.
65N North Area

In attendance
JOHN H. KOCH, OWEN B. CALLIHAN, GERALD E. GOMME.

This company, a service organization which produces custom-built devices for personnel training has, at its exhibit, engineers who will discuss the service.

Telematic Corp.
Chicago, Ill.
65-66 Kansas Building

In attendance
R. W. LIESS, C. J. DOYLE, E. T. SLIWINSKI.

Featured in this exhibit is a multiple, direct and remote-reading, tank-gage installation, simulating actual field operations. Two receiver panels, located a distance from the tanks, demonstrate gaging a number of tanks at one or more remotely located receiving stations. A new mechanical direct-reading tank gage is also displayed. This gage, like the remote-reading gage, is actuated by means of a magnetic drive.

Telematic's direct wire-system transmission is also on demonstration.

Templeton, Kenly & Co.
Chicago, Ill.
42-43 Texas Building

In attendance
ART C. TEMPLETON, PHIL H. McMANUS, BILL H. ZEPP, BILL D. BOLDT.

This company is showing its line of new Simplex products which include a remotely controlled hydraulic puller, a lightweight lever-ratchet jack, another hydraulic unit with two pumps, and a variety of other pullers and jacks. The remotely controlled hydraulic puller, adaptable to both pulling and pushing, is featured in a plastic model to demonstrate its operation.

Weighing only 42 lb., the lightweight, ratchet-lowering-lever jack has a capacity of 10 tons.

Texlite, Inc.
Dallas, Tex.
10N North Area

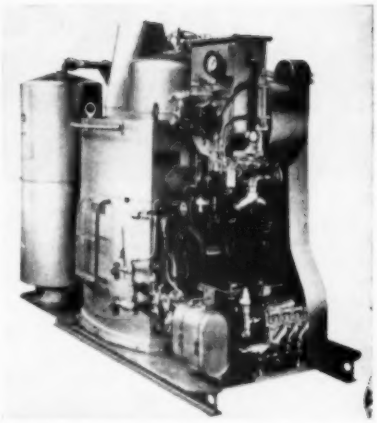
In attendance
J. C. CURINGTON.

Products of this company are porcelain enamel, plastic, and neon signs for the petroleum industry. Displayed are some of these products and methods used in their manufacture.

Texoma Supply Co.
Tulsa, Okla.
69-70-71 Oklahoma Building

Texsteam Corp.
Houston, Tex.
Block V

Texsteam Corp. is displaying five of its new Texsteamers (Vapor-Clarkson steam generators) of different sizes. These automatic units develop 200 psi. steam pressure in 2 minutes from cold water and produce from 300 to almost 5,000 lb. of steam per hour within pressure ranges of 10 to 600 psi. The generators are both portable and stationary types and are arranged for natural-gas or oil firing. Also shown are various types of Texsteam safety valves, with late improvements and new sizes along with Bailey pressure-reducing valves. In addition Texsteam injector pumps are displayed in simulated operation and a new Texsteam hydraulic pump is being shown for the first time. The exhibits located in Texsteam's portable building.



Texsteam portable Vapor-Clarkson steam generator.

Thermoid Co.
Trenton, N. J.
65 Scientific and Technical Building

In attendance
A. F. MATHEIS, L. J. HYLAND, NORRIS GREEN, FRED BIRKHOLTZ, JACK MULLER.

Thew Shovel Co.
Lorain, Ohio
Block 119

In attendance
C. S. CALLICOATTE, G. H. THORGESON, F. A. WILLIAMSON, FRED ANDERSON, G. E. GUNTHER, J. F. BELES, S. S. ROCKWOOD, J. M. McLAIN, FORD FISHER, R. T. COBB, C. W. RABY, F. S. BATTIN, J. V. GREGSON, C. S. WEBER.

The world's largest crane on rubber tires, a Lorain Moto-Crane unit, is being shown by Thew. This mammoth mobile crane has a lifting capacity of 45 tons, and can travel on or off the highway at speeds up to 26 m.p.h. The unit consists of a diesel-powered turntable or superstructure, with high-speed boom hoist, and high-tilting and folding-type gantry, mounted on a 3-axle, 12-rubber-tire carrier, which is powered by a separate diesel engine at 10 forward speeds and 2 reverse speeds.

Other Lorain models at exhibit are a 20-ton Moto-Crane, a 15-ton self-propelled crane, and a Pipeliner Hoe.

Thew Shovel Co.'s 20-ton Lorain Moto-Crane.

The world's largest crane on rubber tires, exhibited by Thew Shovel Co.

Thomas Engineering Co.
Tulsa, Okla.
Block 104

In attendance
O. N. SELLERS, O. M. OLSEN, BOB WATSON, LEON WOODROW, Sellers Engineering Co.; ROBERT HEINZE, Submerged Combustion Corp.; ED WRIGHT, F. M. THOMAS, WALTER THOMAS, Thomas Engineering Co.

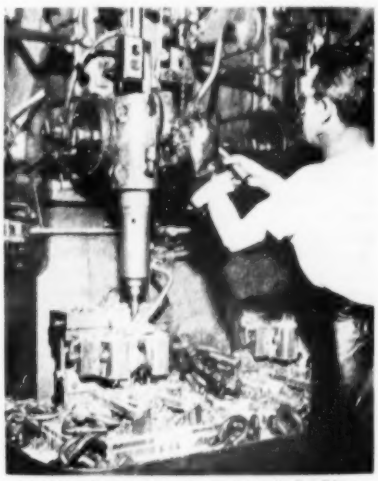
This display includes two large Sellers Immersion boilers one of which, a 60-hp. unit, is generating steam. In addition to the boiler display, a working model of a catalytic-combustion unit for fume incineration is shown. This method of fume elimination is only 4 years old.

Also displayed is a Despatch production oven, and a small Water Cooling Equipment cooling tower of new design, along with a working model of submerged combustion. A method of burning gas below a liquid level that is used for heating and evaporating corrosive solutions.

Thomas Laughlin Co.
Portland, Me.
8 Park Lane

In attendance
D. W. HUFF, MYRON AFFLECK, A. R. FOWLER, LEWIS M. GARDNER.

Laughlin is featuring three display boards incorporating the evolution of a safety hook; products representative of its general line of 1,500 types and sizes of drop-forged wire rope and chain fittings plus a miniature drop hammer in actual operation forging eye bolts.



Drilling heavy drop forged steel shackles.

Thompson Pump Co.
Okmulgee, Okla.
132 Oklahoma Building

In attendance
R. D. THOMPSON, FRANK WILCOM, ED. H. McCUNE, J. R. THOMPSON.

This company is displaying cutaway mod-

A.P.I. PIPE COUPLINGS

All Sizes and Types for Oil Field Use

LINE PIPE COUPLINGS A.P.I.
⅛" to 12"—Seamless and Special Processed—Black or Galvanized

PLAIN TUBING COUPLINGS A.P.I.
1" to 3"—Seamless

EXTERNAL UPSET TUBING COUPLINGS A.P.I.
¾" to 3½"—Seamless

CASING COUPLINGS A.P.I.
4½" to 13⅜"—Long or Short

HYDRAULIC COUPLINGS
⅛" to 3"—Seamless

REAMED AND DRIFTED A.I.S.I.
¾" to 12"—Seamless or Spl. Processed

DRIVE PIPE COUPLINGS
⅜" to 12"—Seamless or Spl. Processed

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Baltimore—Ted Barto, 2301 N. Charles St.
Buffalo—W. E. Spencer Assoc's, 241 S. Elmwood Ave.
Chicago—Harry A. Jay, 122 So. Michigan Ave.
Denver—Earl H. Jones & Co., 1863 Wazee St.
Detroit—Thomas L. Osberger, 19451 Livernois Ave.
Erie, Pa.—R. J. Maggi, Box 711
Falmouth, Mass.—Wm. F. Bennett, 53 Minot St.
Ferguson, Mo.—Wm. H. Heckenberg, 635 No. Florissant Rd.
Houston—Henry H. Paris Distributor, Inc., Box 942
Los Angeles—James A. Riordan Co., 1400 Santa Fe Ave.
Minneapolis—Lin J. Krause, 200 Lumber Exchange
Narbeth, Pa.—J. W. Worthington, 105 Forrest Ave.
Newark, N. J.—Murray Eskin, Industrial Office Bldg.
New York—Henry Stein, 50 Cliff St.
Portland, Ore.—Earl H. Jones & Co., 1233 NW 12th Ave.
Richmond, Va.—P. C. Abbott & Co., Mutual Bldg.
San Francisco—Earl H. Jones & Co., 1150 Folsom St.
Seattle—Earl H. Jones & Co., 819 Thomas St.

FACTORY PHONE: WOODSDALE 3296

WHEELING MACHINE PRODUCTS COMPANY

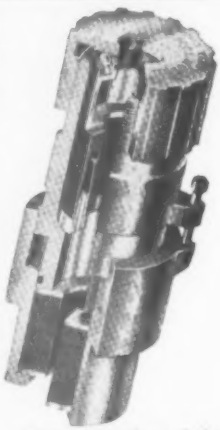
ELM GROVE STATION — WHEELING, W. VA.

● *Here's a Simple and Inexpensive Method of "PACKING-OFF" a Well*

With the VERNON "Pack-off" Stuffing Box you can quickly and easily pack off a well without the use of special equipment. This is desirable when the well is to be temporarily sealed off or if repacking the stuffing box is necessary, since the usual oil leakage is eliminated.

HERE'S HOW IT OPERATES:

To seal off the well involves merely loosening the Safety Lock Screw and screwing the Stuffing Box Body down into the "Pack-Off" Adapter. This compresses the lower set of split moulded packing rings, causing them to expand around the rod and pack off the well. When operation is to be resumed, the Stuffing Box Body is backed off enough to completely relieve the lower packing rings, and the Safety Lock Screw is inserted.



Cut-a-way view of the VERNON "Pack-Off" Stuffing Box. The stuffing box portion of this "Pack-Off" Box is similar in construction to the standard Vernon Stuffing Box.

VERNON

"Pack-Off" STUFFING BOX

Write today for illustrated literature

VERNON TOOL CO., LTD.

CENTRIFUGAL PUMPS • DESANDERS
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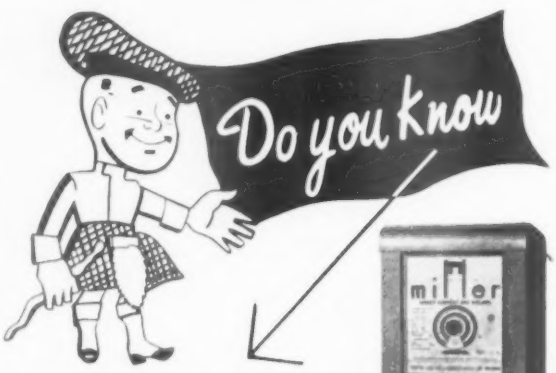


Selenium Rectifier Type D.C. Arc Welders . . . . 5 models to meet your specifications.

. . . THAT THE MILLER SELENIUM RECTIFIER TYPE D.C. WELDER will lay down a higher quality bead of weld metal than any other D.C. welder known today?

. . . THAT the magnetic amplifier principle built into the MILLER SR Welder provides high current densities on the electrodes, thus causing rapid vaporization of the weld metal? This permits instantaneous voltage recovery, eliminating momentary short circuits, commonly caused by globules of metal transferred from electrodes to work.

. . . THAT these are but two of many facts that prove the superiority of MILLER SR Welders . . . the greatest advancement of arc welding in the past 25 years?

The complete story is yours upon request . . . write for it today, and the name of your nearest MILLER distributor.

miller ELECTRIC MANUFACTURING CO.

SINCE 1929 — APPLETON — WISCONSIN

els of its line of sucker-rod pumps. More than 15 models are on display showing various pump combinations for a wide variety of services. In addition, the company is showing its new ball-housing cage which is designed to overcome gas locks and sand conditions.

Thompson Tank & Manufacturing Co., Inc.

Long Beach, Calif.

Block 206B

In attendance

C. S. THOMPSON, L. E. WEED.

A 45-bbl. unitized vacuum tank and an 80-bbl. semitrailer-mounted unit are being

Thompson 45-bbl. unitized vacuum tank.

exhibited by this company. The 45-bbl. tank is mounted on a 450 G.M.C. truck chassis and the trailer-mounted tank is equipped with a 620 G.M.C. tractor. These mobile, vacuum-tank units serve in all branches of the petroleum industry during construction and in operation from drilling through processing.

Thompson Tool Co.

Iowa Park, Tex.

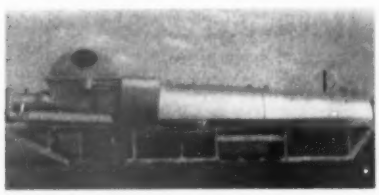
Block 207

In attendance

JOEL CATHEY, O. M. BELL, W. H. CLARK.

Feature of Thompson Tool Co.'s exhibit is its new vibrating shale shaker with an attached sample machine. This shaker is designed for drive by either electric motor, steam, or internal-combustion engine.

Along with Thompson Tool Co.'s vibrating shaker is displayed one of its rotating shale separators, which is also provided with an attached sample machine.



Thompson Tool Co.'s rotary shale shaker.

Thornhill-Craver Co.

Houston, Tex.

67 to 72 Kansas Building

In attendance

HOMER E. THORNHILL, C. W. THORNHILL, KENNETH CRAVER, T. T. WORD, JR., T. J. BILLINGS, BERT L. GRIFFIN, FRANK BAKER, JAY HEMBREE, EARL GRISSOM, CLINT HORN, WALTER HAMMOND, JOHN LOEFFLER, GEORGE HALL, OBERT NORDIN.

This company is displaying couplings, fittings, and valves for drilling, producing, and pipe-line divisions of the industry, featuring its Unibolt coupling principle. Included in exhibit are steel couplings in all sizes and tests; slush-pump suction strainers; welding neck couplings; pipe-line couplings and scraper traps with self-sealing gaskets; couplings for terminal manifolds; pipe-line strainers; malleable couplings; gas-line blowdowns; malleable tees and crosses; Flexi-ball joints; christmas-tree fittings; injection-line cage nipples; flow-rated beans; X-type flow beans.

A special feature of the exhibit is Thornhill-Craver's new jet-type self-cleaning fluid strainer for pipe-line operations. This new strainer can be automatically cleaned without any manual operation other than opening and closing of a valve. The strainer is cleaned by hydraulic impact of the jet beads as stream hits screen and flushes solids down a drain into sump. Only about 3 minutes are needed to clean and return the unit to service.

Thread-Ezy Manufacturing Co.

Carunna, Mich.

7 Texas Drive

This company is featuring its "Port-A-Pony," a feather-weight portable, powered unit for threading pipe in the shop or in the field. The 26-lb. unit covers a range of ¼ to 4 in. and takes all popular types of hand die stocks.

Portable power threading unit.

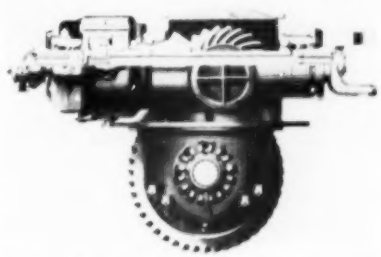
Timken-Detroit Axle Co.

Detroit, Mich.

Block 204

This company is featuring its new SLD-series tandem-drive, rear-axle unit for six-wheel motor trucks. The SLD unit is the first of five new models to be introduced this year.

Also on display is a motor-driven working model of the TDA inter-axle, spur-gear-type differential. The QT-series, hypoid-helical two-speed, double-reduction, rear-driving axle



Timken-Detroit Axel Co.'s TDA interaxle differential.

I.P.E. EXHIBIT DIRECTORY

is displayed along with a T-17227-P TDA tubular trailer axle complete with aluminum hubs. Another display is a new duplex hydraulic brake. Except for a standard straight-bore wheel cylinder, there are only eight different parts making up this brake. These major displays are augmented by numerous other TDA products.

Timken Roller Bearing Co.

Canton, Ohio

139-142 Oklahoma Building

In attendance

P. J. REEVES, S. C. PARTRIDGE, R. K. McCONKEY, H. W. TRUMP, H. B. HILLEY, C. H. McCOLLAM, D. K. KUPPERT, C. H. CLARK, S. T. SALVAGE, PETER C. POSS.

The Timken exhibit consists of two parts, representing two divisions of the company. Half of the exhibit is devoted to bearings, such as are used in the oil industry in drilling and production. The other half relates to the use of Timken alloy steel and seamless-steel tubing, and features diamond core drills, core barrels, impact jars, perforating guns, drill collars, tool joints, oil-well liners, sludge pumps, drill pipe, and refinery tubing.

Torcon Corp.

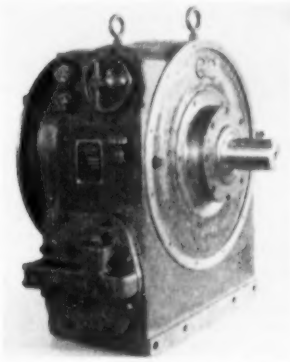
Ashtabula, Ohio

32N North Area

In attendance

H. S. REDDIG, R. BRUNKEN, W. R. HOWARD, P. R. YOUNGS, N. A. D'ARCY, JR., H. A. BETTS, G. H. BEEG, T. S. BEDNAR.

Manufacturers of torque converters for the industrial field, Torcon Corp. is featuring its products for oil-industry service. Shown is a torque converter for utilization in drilling and well servicing plus rotary and pump drives along with oil-well servicing trucks.



Torque converter manufactured by Torcon Corp.

Torrington Co.
Bantam Bearings Division

South Bend, Ind.

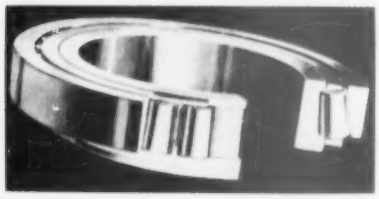
177-178 Oklahoma Building

In attendance

J. H. WILLIAMS, W. F. SHOTOLA, JOHN A. TOTH, G. F. MARVEL, R. E. DUNKLE, G. W. WEISS, GEORGE R. TRUMBULL.

Torrington is showing a complete line of antifriction bearings for the petroleum industry. Featured is the Torrington self-aligning spherical roller bearing for oil-industry applications including drum shafts of draw works, rotary drive shafts, pumps, and others. Among other Torrington bearings shown are tapered-roller bearings, straight-roller, thrust

bearings, conical-roller thrust bearings, radial-roller bearings, and heavy-duty needle bearings.



Torrington single-row, tapered roller bearing for oil-industry service.

Tracerlab, Inc.
Boston, Mass.
64N North Area

In attendance
EDWARD DeCROSTA, THOMAS KELLY, JERRY KOHL.

New equipment for tagging interfaces with radioactivity and detecting the interfaces automatically and precisely at distant points is being displayed by Tracerlab, Inc.

This new equipment includes a simple device that inserts through a standard ½-in. gate valve connected to the pipe or equipment at the desired point of injection. A sealed capsule containing the desired quantity of radioactivity, and a set of Geiger tubes with a recorder for attaching to the outside of the pipe line at the point of detection complete the device. Alarm circuits and telemetering equipment may be utilized when desired.

In addition to the interface tagging equipment, Cobalt-60 radiography sources, and a complete line of accessory equipment are being shown by Tracerlab, Inc. Also on display are a number of new laboratory instruments and accessories used for detection, measuring, and recording of radioactivity.

Trans World Airlines, Inc.
Tulsa, Okla.
Front of Texas Building

Treat-Rite Chemical Co., Inc.
Nowata, Okla.
36 Park Lane

In attendance
J. L. WILEY, M. L. ROBERTS, PAUL DELOZIER, DEAN HOWARD.

Treat-Rite Chemical Co., an associate exhibitor with Keystone Supply Co. is a service organization specializing in water flooding. Personnel are available at the exhibit for discussing injection plants, water treatments, and other phases of water injection for secondary recovery of oil.

Tretolite Division, Petrolite Corp.
Tulsa, Okla.
Block U

In attendance
JOHN S. LEHMANN, JOHN V. JANES, KENNETH R. FARR, WILBUR C. ADAMS, FORREST L. KELLY, GORDON NEES, GLENN W. CAMBLIN, WM. J. NUELLE, SEARS LEHMANN, LEWIS MONT LAND, FRED HUBLER, C. C. ROGERS, M. J. MULLALLY, HARRY S. HORTON, RUSSELL C. ANDUSS, N. S. AUSTIN, ROBERT C. BEST, W. M. BEST, M. E. BOLLES, L. C. CAMBLIN, JR., JOHN W. CLOTE, LEE V. CRUCE, RAY HOUSLEY, ROBERT E. HOWE, L. L. HUNTER, HENRY V. KING, R. H. LEENHOUTS, FRANK D. MITCHELL, MURL R. OGDEN, W. W. POTTS, AARON RATLIFF, WM. T. ROACH, J. B. ROBINSON, S. B. SMITH, JR., WARNER SMITH, W. N. THURSTON, R. A. WATERS, ORVAL HUMPHREY, C. M. RUSSELL, C. L. MORRIS, L. A. BAINTER, W. N. EDDINS, E. P. BARCLAY, R. V. JOHNSTON, W. A. ODOM, O. L. BASSHAM.

Tretolite Co.'s exhibit features a typical service engineer's field car, completely fitted with modern, portable, petroleum-emulsion test equipment. Samples of all latest Tretolite compounds, paraffin solvents, and Kontol formulas plus a 6-volt centrifuge machine comprise this equipment. In addition to the field engineer's test equipment, a collection of crude-oil samples from a wide variety of oil fields is displayed.

Trinity Portland Cement Division
Houston, Tex.
85-86 Oklahoma Building

True-Gunal Co.
Tulsa, Okla.
West of Grounds Office

Tube-Kote, Inc.
Houston, Tex.
9N North Area

In attendance
L. E. HEINEN, C. L. GARNER.

Tube-Kote, Inc., manufacturer of corrosion-resistant linings and coatings for tubular goods, is featuring its new TK-43 lining. Other products include TK-2 Standard corrosion lining, TK-2 Special paraffin lining, TK-88 Teflon lining, cellulose acetate butyrate plastic pipe, and polyethylene pipe.

Tube Turns, Inc.
Louisville, Ky.
1-2 Texas Building and 89-90, 121-122 Oklahoma Building

In attendance
D. R. CHEYNEY, J. E. CHUMBLEY, JR., M. De CAMP, W. R. EMRICH, JACK W. GREEN, L. D. HALL, J. D. MATTIMORE, C. B. McLAUGHLIN, L. O. MORRIS, JR., T. H. PIKE, JR., JOHN G. SEILER, J. D. TOLLIVER, GENE WEDEREIT, W. B. WHENTHOFF.

At 1 and 2 Texas Building, Tube Turns, Inc., is featuring Tube-Turn welding fittings and flanges. Useful technical literature is being distributed at this location. Another location at 89-90, and 121-122 Oklahoma Building is devoted to an exhibit of conventional and odd-degree Tube-Turn welding fittings used in pipe-line service. Included is a 36-in. elbow, the largest size ever shown in a commercial exhibit.

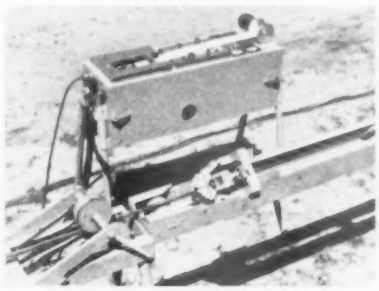
A collection of odd-degree large-diameter Tube-Turn welding fittings destined for pipeline service.

Tuboscope Co.
Houston, Tex.
Block 117

In attendance
GLENN PRICE (B. G. PRICE), F. M. WOOD, JIM ENGLE, BOB MARTIN (R. S. MARTIN III), R. S. LEWIS, J. W. BOZEMAN, B. H. PICKARD, AL QUAY, JULIAN UNGER, VERNON GOINS, LEROY LYLES, ROSS MAULDIN, HARRY BOZEMAN, A. B. ROOP, W. A. FOX, FRANK WINCHESTER, TRUMAN DILLMAN, NORMAN ROBERTSON, BEN BERRY.

Tuboscope Co. is introducing an electronic sucker-rod inspection unit at its exhibit. This new unit is designed for inspecting sucker rods as they are pulled from the well. Inspection can be made also of racked rods. Any and all cracks in the rods are indicated including those beneath the surface.

In addition to this new unit, Tuboscope is exhibiting its Tube-Tector, rubber drill-pipe casing protectors and a tubing caliper for measuring corrosion and erosion inside of tubing without killing the well. This caliper has the Tuboscope base line, which permits accurate evaluation of erosion. A Sonoscope inspection unit will be shown also.



Electronic sucker-rod inspection unit.

Tubular Exchanger Manufacturers Association, Inc.
New York, N. Y.
Block 105

This unusual exhibit is made up of 12 heat-exchanger manufacturing companies which comprise the membership of the Tubular Exchanger Manufacturers Association. Through a technical committee each of the T.E.M.A. members is supplying one or more cutaway models illustrating various design and construction features of different types of heat transfer equipment. An explanatory brochure setting forth the interesting features of each model is available at the exhibit. In addition, literature explaining history, purposes, and activities of the association is also available. A special display concerns the University of Delaware experimental program, now in its fifth year.

Companies participating in this cooperative effort are: Struthers Wells Corp.; Foster Wheeler Corp.; Kewanee-Ross Corp.; Henry Vogt Machine Co.; Whitlock Manufacturing Co.; Engineers & Fabricators, Inc., Lummus Co.; M. W. Kellogg Co.; Southwestern Engineering Co.; Western Supply Co.; Griscom-Russell Co.; and Alco Products Division American Locomotive Co.

Tulsa Shock Absorber Co.
Tulsa, Okla.
17 Silver Lane

The product this company is showing is designed to reduce polished-rod loads and rod-string breakage. Called a Shock Absorber, the device is being shown in two types, one for polished-rod application and the other for use in pitman-beam pumping.

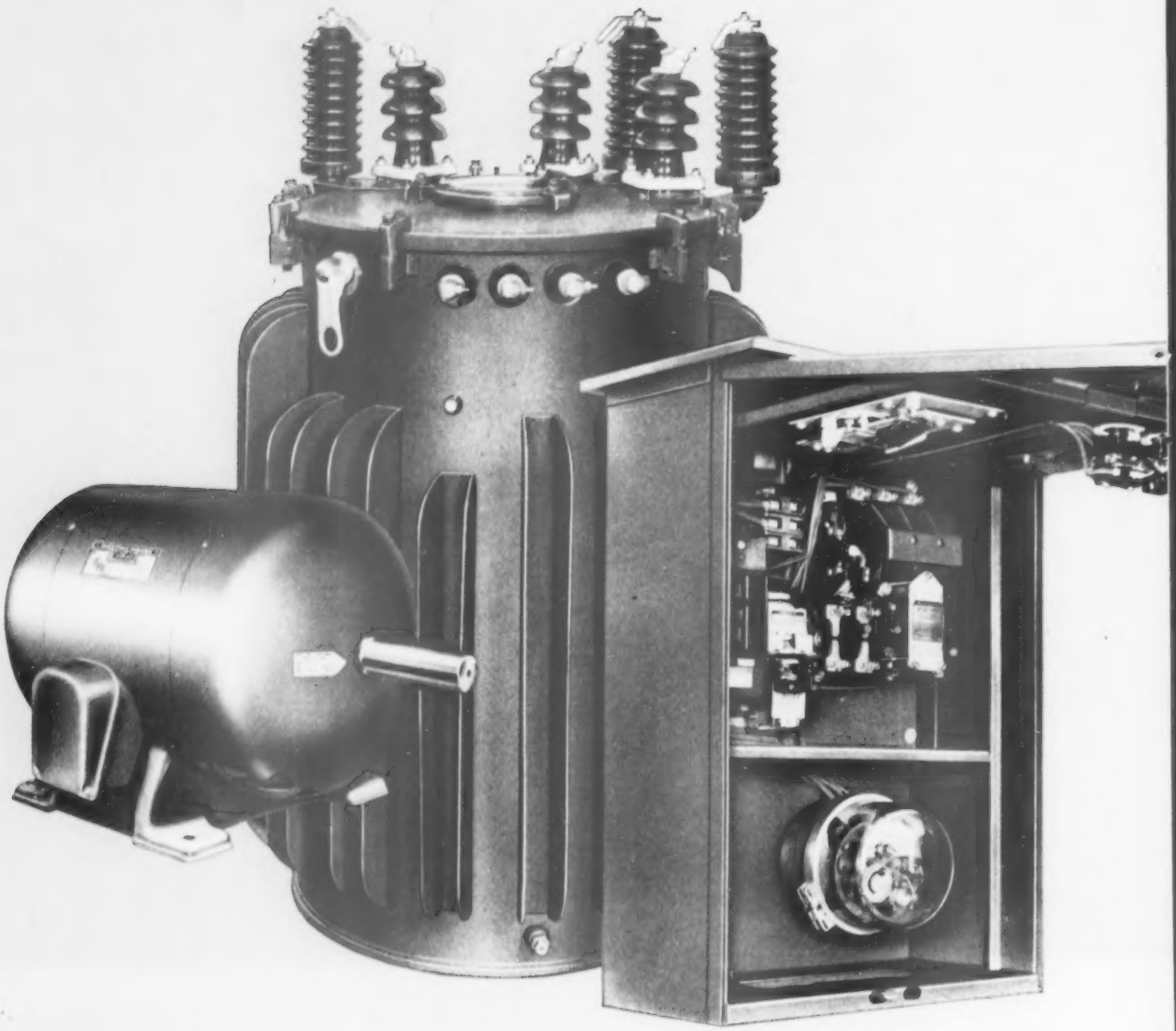
Tulsa Testing Laboratory
Tulsa, Okla.
22 Silver Lane

In attendance
JAMES B. DAVIS, H. GLENN HENDERSON, ORVAL W. DANIELS, WYATT L.

Westinghouse equipment pumps up lease electrification savings

A convincing number of operators are proving, day after day, that electrified pumping pays off in substantial savings. At Smackover field, for instance, electrified pumping reduced lifting costs 36%. At McCamey field, according to many operators, it saved enough to offset power costs. And at a 49-well lease in the Healdton field, pumping costs are only 4.1¢ per barrel, with the installed cost of the power line, including transformers, totalling only $378 per well.

Sound reasons underlying the use of electricity are outlined on the following pages. Also, you'll see the electrical equipment—Westinghouse equipment—that pumped up these savings.



Westinghouse three-unit team puts profit in electrified pumping

Weatherproof, dead-front control units are specially designed for the control of oil well pumping motors. Enclosures are NEMA III weatherproof type to permit outdoor pole-mounting close to the pumping motor. The control provides for across-the-line motor starting with complete overload and low voltage protection. It is available in two general types: the Automatic Unit, which automatically controls pumping by means of a built-in time switch, and the Local Control Unit, which provides for manual control only. Controllers are available with AB Circuit Breaker or Fusible Disconnect.

Completely Self-Protecting (CSP) Westinghouse Transformer, especially designed for service in open, unprotected areas, is the best bet for uninterrupted electrical service on your lease. It is self-protecting against overloads, short circuits, direct strokes of lightning, and line surges.

Life-Line* oil well pumping motors are available for all pumping locations. Designed to provide protection against rain, snow and sleet, it is built to NEMA specifications B, C, and D. You'll like Life-Line's sealed, pre-lubricated bearings. They require no on-the-job greasing. The right grease, in the right amount, is sealed in at the factory.

*Trade Mark

How electrified pumping pays off . . .

Fewer men, fewer trips . . . Electrified pumping with automatic controls eliminates daily inspection trips to the well. Often, one man can handle several leases located miles apart. Westinghouse control equipment, for example, starts and stops pumping on a repetitive daily or weekly cycle. Set the time switch and leave it alone!

Scientific pumping . . . Electrification permits the automatic control of the pumping periods—an economical procedure when wells are at low fluid levels. Nothing is left to the operator's whims. Each well can be pumped precisely as it should be for maximum production.

Less wear and tear . . . Continuous, smooth and steady power delivery by electric motors produce little wear, shock or overload on your equipment. Automatic starting and stopping halt excessive fluid pounding and damage to polished-rod packings if wells suddenly go dry.

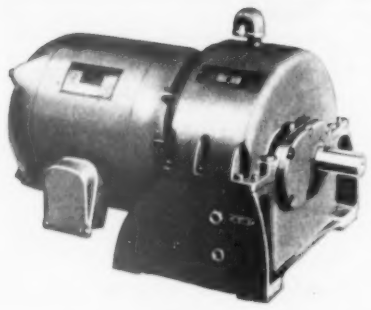
No maintenance problems . . . You can run a Westinghouse Life-Line Motor many years before maintenance is necessary, but you must overhaul a multicylinder gas engine every 2 to 4 years. Life-Line Motors need no lubrication. Gas engines require a daily checkup, frequent lubrication and addition of water and antifreeze to the cooling system. These are examples of how electrified pumping reduces your lease maintenance problems.

Winter-proof . . . A Life-Line Motor starts easily on cold mornings. No cooling system to freeze. Lightweight and compact, it can be installed or moved easily. Lastly, electrified pumping brings power to your lease for other purposes.

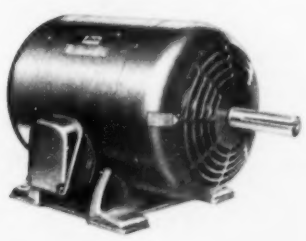
Westinghouse can help you capitalize on the profit possibilities in electrified pumping. On these pages, you'll find evidence to back up this statement.

YOU CAN BE **SURE**...IF IT'S

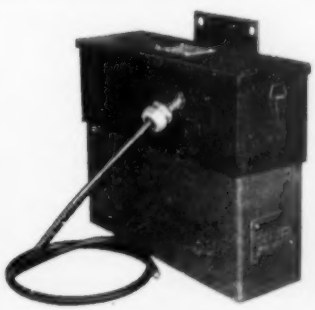
Westinghouse



Long service life, with little maintenance, keynotes Life-Line Gearmotors. Heat-treated gear teeth absorb shocks of heavy-duty service. Split-case construction permits easy access to working parts for inspection or servicing. Antifriction bearings maintain accurate gear centers and reduce wear. Integral motor design makes entire unit compact.



Life-Line TEFC (totally-enclosed, fan-cooled) motor meets the needs of pumping installations located where the weather is unusually bad. Dust, sand, heat, insects and rodents can't impair the motor's operation. Tuffernell® insulation and Tufvar® synthetic resin-covered wire are used. Complete stator is dipped and baked in thermal setting varnish.



Inerteen® capacitors confine the nonproductive current to a local circuit, permitting more of your system's capacity to carry useful working current. The result is an improvement in power factor, a cut in power costs, and more capacity for new loads. Pictured above, a 5 kvar, 3-phase, 60-cycle, 460-volt Inerteen capacitor for outdoor service.

SEE THESE PRODUCTS AT THE OIL SHOW—TULSA—MAY 14-23

Overnight delivery . . . from stocks available

Westinghouse can deliver overnight—to most locations—all of the main types of pumping motors, controls, distribution transformers and capacitors for oil well leases. Interchange of warehouse stocks throughout the nation-wide Westinghouse network assures dependable "short order" service. In addition, Westinghouse Repair Plants, strategically located, offer complete facilities for rebuilding and repairing all makes of equipment.

Application help . . . from oil-wise Westinghouse engineers

Each product in the complete Westinghouse line is designed to work best under specific conditions. To aid you in matching the correct product to each job, Westinghouse offers the services of a local staff of Consulting and Application Engineers experienced in petroleum industry problems.

Free book on electrified pumping

Mail the coupon for your free copy of the 48-page book, *Westinghouse Electrified Oil Well Pumping,* and the Descriptive Bulletins listed. The book is packed with detailed application information on motors and gearmotors, pumping controls, and power generation and distribution equipment. And, if you'd like to talk to your nearby Westinghouse representative, please check the appropriate square in the coupon. J-94002

YOU CAN BE SURE...IF IT'S

Westinghouse

Westinghouse Electric Corporation
Box 868, Pittsburgh 30, Pa.

Please send me . . .

- ☐ Westinghouse Electrified Oil Well Pumping, B-4039
- ☐ Oil Well Pumping Motors, DB 3860-1CSP
- ☐ Oil Well Pumping Controls, DB 3860-1
- ☐ Distribution Transformers, DB 47-605
- ☐ I would like to have a Westinghouse representative visit me.

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

WELLS, JOHN W. DANIELS, JACK STEWART, DAVID I. GRAND, JAMES A. TYER, LAWRENCE VANDERGRIFT.

This company is maintaining a staff of engineers at its exhibit for discussion of its services to industry. Tulsa Testing Laboratory serves the engineering, architectural, and legal professions, business and industry in the testing, inspection, and research on products, structures and problems where unbiased results are required and where testing facilities and personnel are not available within their own organizations.

Twin Disc Clutch Co.
Racine, Wis.
81N-82N and Block 207 North Area

Features of Twin Disc Clutch Co.'s display are its new products for power linkage requirements in the petroleum industry.

New additions to the Twin Disc line include a two-stage, hydraulic, torque converter, a two-speed transmission designed to extend full-range performance of three-stage torque converters, a new type-disconnecting hydraulic power take-off, and a new-type, air-actuated, friction clutch

A motor-driven clear-plastic model of Twin Disc's three-stage hydraulic torque converter is used for demonstration purposes.

Features of the truck-type, three-stage converter are demonstrated to show the free-wheel assembly, which permits up to 70 per cent of the engine's rated horsepower to be converter braked.

Further displays and demonstrations are made of other phases of the Twin Disc line of industrial drives, including friction power takeoffs, Hydro-Sheave drives, hydraulic couplings, heavy-duty clutches and single and duplex multiple-plate clutches. Sectionalized cutaways of several of these products are on display.

Union Carbide & Carbon Corp.
New York, N. Y.
213-214 and 237-238 Oklahoma Building

This company is featuring a demonstration of hardfacing valve rings with Hastelloy Alloy B by its Unionmelt process using the series arc method. Other Linde apparatus for joining, treating, and cutting metal is also being shown.

Castings, sheets, and fabricated parts of Hastelloy corrosion-resistant alloys for handling corrosives in refineries and petrochemical plants are displayed. Haynes hardfacing rods featuring new improved electrodes and hard-faced tool joints, drilling bits, and valves are also shown. In addition, a display of cutting tools and precision castings is being exhibited.

Union Chain & Manufacturing Co.
Sandusky, Ohio
37-38 California Building

In attendance

E. F. EMMONS, P. CATRON, E. P. McCUNE, J. F. SMITH, R. L. MULLANEY, A. SKINNER-KLEE.

Union Tank & Supply Co.
Houston, Tex.
Block H

In attendance

E. L. BYER, GWYNNE RAYMOND, L. J. DORSEY, E. G. MURPHY, H. L. POOLE, G. T. BYER, J. G. BYER, R. L. CLONINGER, A. F. NIXON, C. R. WILLIAMS, H. R. STOKER, P. H. WESTERMAN, E. E. McDONALD, WALTER H. COX, G. G. BYER, TED R. STUNKARD, JAMES E. CONNOR.

Union is showing its 4-ft.-diameter by 28-ft.-high vertical heater-treater unit along with one of its horizontal heater-treaters and a two-stage, horizontal, skid-mounted separator unit.

Union Wire Rope Corp.
Kansas City, Mo.
80-82, 129-131, and 66 Texas Building

In attendance

M. G. ENSINGER, R. B. BOAND, R. O. KASTEN, M. B. RILEY, C. G. RATZLAFF, H. H. MUSSELMAN, L. G. SCHRAUB, R. G. NOBLE, J. J. LESTER, M. E. GREEN, F. C. MEGGERS, LES PRICE, J. A. UNDERCOFLER, C. M. ZERR, J. P. ORAHOOD, J. J. MIESEN, GREGG F. STOCK, M. B. HANSELL, SR.

Union Wire Rope Corp. is featuring a "Clinic on Rotary-Line Cutoff Procedure" for rig operators, tool pushers, and drillers. A staff of engineers are on hand to discuss this subject.

The company's product display includes its Tuffy rotary lines, special service wire ropes, and Tuffy slings in a variety of types for pipe line, refining and other phases of the oil industry.

Highlight of the exhibit is an automatically operating miniature railroad.

U. S. Electrical Motors, Inc.
Los Angeles, Calif.
67N-68N North Area

This exhibit features a wide variety of electrical motors. Included are U. S. Motors' Varidrive, an all-in-one variable speed motor; the Syncrogear, with single and double reduction or worm gearing; the Uniclosed, all-purpose horizontal motor; and the U. S. line of totally enclosed and explosionproof units.

Two animated panels are in operation at the display. One panel demonstrates how Varidrive Speed Changes may be made, while the other describes the action of vibrating coil wires used in the U. S. process of insulating motor windings with asbestos. To further demonstrate the asbestos feature, a Uniclosed motor is overloaded by driving a larger motor, thus showing performance of these motors under high-temperature conditions.

United States Safety Service Co.
Kansas City, Mo.
14 Park Lane

In attendance

L. W. BROWN, JR., R. J. RUSSELL, T. J. O'BRIEN.

This company, manufacturers and distributors of safety equipment, is showing a variety of its products. Exhibited is a line of replaceable-lens goggles and spectacles. Also shown are a fiber-glass safety hat and welding helmets. In addition, a vinyl work apron, a sensitive carbon-monoxide indicator, and coated-type salt tablets are being displayed.

U. S. Safety Service's acid goggles.

United States Steel Corp.
Pittsburgh, Pa.
Block 2

"Where there's oil there's steel" is the theme of United States Steel Corp.'s exhibit. The corporation's multifold display features its own research and development departments and at least 13 of its operating divisions and companies. The display, designed to show steel's role in oil, is a panorama of the story of steel and oil, from mill to well to refinery to consumer. A portion of the exhibit is devoted to the corporation's Oil Well Supply Division which is showing products it manufactures and those it supplies to the oil industry.

National Tube Division is presenting two revolutionary developments in oil tubular goods. The first is a special seamless casing for deep-well drilling that is substantially stronger and lighter than the highest grade covered by A.P.I. specifications. The second is a new-type buttress-thread casing which produces a joint practically as strong as the body of the pipe.

U. S. Steel Products Division's exhibit is centered on a solution to the problems of packaging and distribution of petroleum products. The division is introducing its new drum cleaning process which produces clean, scale-free and rust-inhibited drums.

Consolidated Western Steel Division, which specializes in fabricated steel products for petroleum processing, storage and distribution, is displaying a section of the largest-diameter gas line in the world. Other Consolidated Western contributions to the petroleum industry are illustrated in photos including a new-type steel dock barge.

American Steel & Wire Division has a new ton-mile calculator for distribution to visitors. The product exhibit includes such A.S.W. items as preformed rotary drilling lines, sand and coring lines, cable-tool drilling lines, tapered drilling lines, and others.

Gunnison Homes, Inc., U. S. Steel's prefabricated-housing subsidiary, is utilizing this exhibit to kick off its program of direct sales to industrial users. These low-cost houses can be trucked to isolated drilling locations and they can be moved from one site to another with a minimum of damage and cost.

Universal Atlas Cement Co., a subsidiary of U. S. Steel, is centering its exhibit around Uniflo, its special oil well cement. Unaflo features are focused in the simulation of a down-the-well cementing operation.

A large number of additional exhibits by various other units of U. S. Steel will also be included in the corporation's exhibit structure.

United Supply & Manufacturing Co.
Tulsa, Okla.
28-29 California Building
and
Southeast of California Building

In attendance

H. B. GUTELIUS, FRANK WOOD, H. B. GUTELIUS, JR., F. W. FISHER, A. A. THIEMAN, R. N. JONES, GLENN WILSON, JACK SCHWARTZ, B. S. VAVRA, M. W. BROWN, A. R. BROWN, J. LOYS BLAIR, H. C. THORNTON, C. G. KING, JR., CLIFFORD GILBERT, L. J. KLUPPEL, BEN REAGOR, L. P. CHILDS, JOHN L.

United Supply Co.'s pumping unit.

I.P.E. EXHIBIT DIRECTORY

SMITH, R. B. NORTHUP, DON JOHNSON, L. W. MOORE, W. H. HUEY.

This company has two exhibit locations. Its main location is at 28-29 California Building. The other location is out of doors on Texas Drive.

Displays include National Tube products, a Byron Jackson air-operated tubing spider, and two complete pumping units. One of the pumps is a floor-clearing United unit with adjustable crank weight and powered by a 195 GKU Waukesha engine. This unit will also have United's multicyclinder engine starter. The other pumping unit is powered by a 503 Fairbanks-Morse engine and equipped with United's friction-type single-engine starter. Another display shows United's gear box.

Unit Rig & Equipment Co.
Tulsa, Okla.
Block 12 and Northeast Area on Skelly Drive

In attendance

RAY CARTER, JACK SMITH, JESS VINT, EARL KIRBERGER, TOM PEERY, AL WHITE, JIM BLAIR, RAY LOUDENBACK, WENDELL MESSENGER, CHARLES SOUTHWARD, SAM ENNIS, VANN CAMPBELL, FLOYD ROBERTS, BILL SULLIVAN, BURNIS TAYLOR, VERNON TAYLOR.

Unit Rig is showing two of its rigs. One of the units is a new rotary draw works for 5,500 to 8,500-ft. drilling, and the other a trailer-mounted workover and drilling job. Other equipment displayed by Unit Rig includes various models of its draw works and engine compounds.

Universal Atlas Cement Co.
New York, N. Y.
Block 2
(See United States Steel Corp.)

Universal Oil Products Co.
Des Plaines, Ill.
73-74 Scientific and Technical Building and Hall of Science

Universal's main display shows its Platforming units now in operation or in various stages of construction. These units are pinpointed by flasher lights on a large, flat map of the world. A luminous graph shows how production of Platformate has increased since the first Platformer went into commercial operation.

At the Hall of Science exhibit U.O.P. has a scale model of Cosden Petroleum Corp.'s recently installed Platformer-Udex combination. An illuminated flow-diagram shows flow through the Platformer and Udex units.

Universal Packing & Gasket Co.
Houston, Tex.
16 California Building

In attendance

A. J. PIPPERT, E. B. HEATHCOTT, LYNN DAVIS, B. L. HEATHCOTT, B. W. WEINER, PERRY HAMILTON, E. B. PIPPERT, LESTER BURLESON.

This company is featuring five of its products. Included are Utex-Mattco liner packing for all makes and sizes of slush pumps; Ezeseal liner packing for all makes and sizes of slush pumps, and interchangeable with manufacturers' parts; plus Non-Crushable fluid piston-rod packing.

In addition, Universal Packing is displaying its valve-cap and cylinder-head gaskets along with its Uron cups for hot and cold water and oil, mud, hydrocarbons, mild chemicals, and acids.

University of Tulsa
Tulsa, Okla.
78 Oklahoma Building

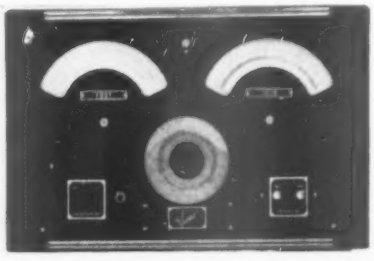
U. S. Steel Products Division
United States Steel Corp.
New York, N. Y.
Block 2
(See United States Steel Corp.)

Vapor Recovery Systems Co.
Compton, Calif.
21, 79 and 80 Scientific & Technical Building

In attendance

FRANK V. LONG, SR., L. S. CURFEW, GEORGE E. DENNY, H. DICKINSON, T. M. STONE.

Vapor Recovery Systems Co., manufacturers of the "Varec" line of tank equipment, gas control, and safety devices, is displaying a variety of its products including cutaway models and demonstration pieces. Featured is "Varec" electronic remote-reading gaging equipment.

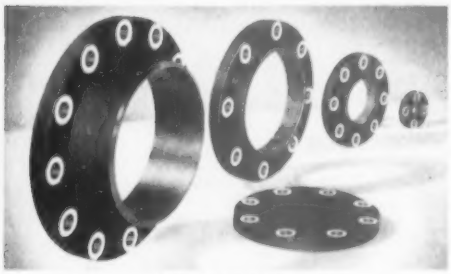


"Varec" electronic remote-reading receiver unit.

1853 ★ 1953
HARRISBURG STEEL
Centennial Year
100 YEARS OF SERVICE TO COUNTRY AND INDUSTRY

Made to A.P.I. and A.I.S.I. Specifications

HARRISBURG
SEAMLESS STEEL PIPE COUPLINGS



Manufactured to A.S.A. Standards

HARRISBURG
DROP-FORGED STEEL PIPE FLANGES

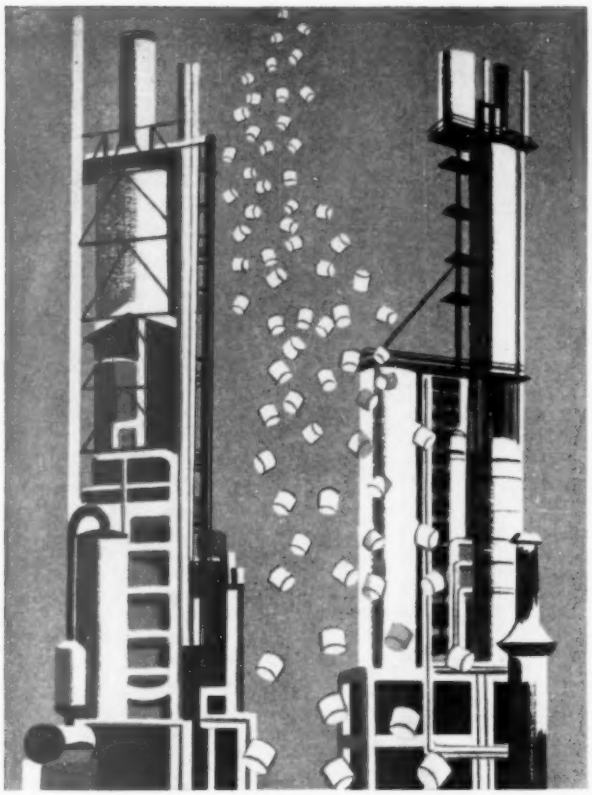
MILLIONS IN USE IN ALL BRANCHES OF THE PETROLEUM INDUSTRY

Wherever couplings and flanges are used, the *Harrisburg Steel* reputation for consistently reliable products is well known. Oil producers, large and small, have used them for generations . . . depend on them for the maximum of trouble-free service. Next time you order couplings and flanges, we suggest you contact our oil country distributors:

Houston • **Henry H. Paris, Distributor, Inc.**
Los Angeles • **Howard Supply Company**
Tulsa • **W. C. Norris, Manufacturer, Inc. (Couplings)**
Tulsa • **Ardun Supply Company (Flanges)**

Or write the factory for Catalogs and prices.

100 Years in Pennsylvania's Capital
Harrisburg Steel CORPORATION
HARRISBURG 6 PENNSYLVANIA



Filtrol SR Pelleted Cracking Catalyst

FOR HOUDRIFLOW AND AIR-LIFT TCC UNITS. FILTROL SR CATALYST IS NOW BEING USED SUCCESSFULLY IN COMMERCIAL OPERATION. SR CATALYST YIELDS HIGH OCTANE CATALYTIC GASOLINE AND CAN BE USED PROFITABLY IN CRACKING A FULL RANGE OF GAS OILS, INCLUDING HIGH SULFUR BEARING STOCKS. SHOWN BELOW ARE THE CHARACTERISTICS OF SR CATALYST AS COMPARED TO REGULAR FILTROL TCC PELLETED CATALYST USED SO SUCCESSFULLY SINCE 1943:

GRADE	FILTROL TCC (23)	FILTROL SR (63)
ACTIVITY BY CAT A	40	36
CPF	1.0	1.0
PELLET DIAMETER	0.19"	0.19"
MESH 3-6 MESH	99%	98.5%
HARDNESS	70	93 MIN.

TYPICAL YIELDS OF SR AS COMPARED TO REGULAR FILTROL TCC ARE:

GRADE	FILTROL TCC (23)	FILTROL SR (63)
CYCLE OIL, VOL. %	48	48
DEBUT. GASO., VOL. %	42	40.5
DRY GAS, WT. %	5.0	5.8
TOTAL C_4, VOL. %	12	13.5
COKE, WT. %	4.8	3.9
OCT. NO. F-1 CLR.	90	92.5

OTHER
REASONS FOR USING
FILTROL CATALYSTS

1. Higher Octane Barrels
2. High Butylene Yield
3. Low Cost
4. Varied Plant Facilities
5. Faster Regeneration Rate
6. Low Attrition Rate
7. Technical Service
8. Uniformity
9. Lowered Excess Butane

Filtrol*

*T. M. REG. U. S. PAT. OFF.

FILTROL CORPORATION

OFFICES: 727 WEST SEVENTH STREET, LOS ANGELES 17, CALIFORNIA
PLANTS: VERNON, CALIF.; SALT LAKE CITY, UTAH; JACKSON, MISS.

CATALYSTS AND ADSORBENTS

I.P.E. EXHIBIT DIRECTORY

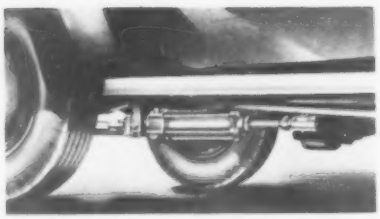
Vickers, Inc.
Division of Sperry Corp.
Detroit, Mich.
Block 104A

In attendance

B. L. STONE, O. G. HOUSER, J. R. MOSER, E. ASCH, R. A. CASSON, G. W. MORTE, R. KAUPPI.

Vickers, Inc., is featuring its hydraulic pumping unit and power-steering boosters for automatic vehicles. A full-scale, 30-ft. production pump, in actual operation, is being displayed.

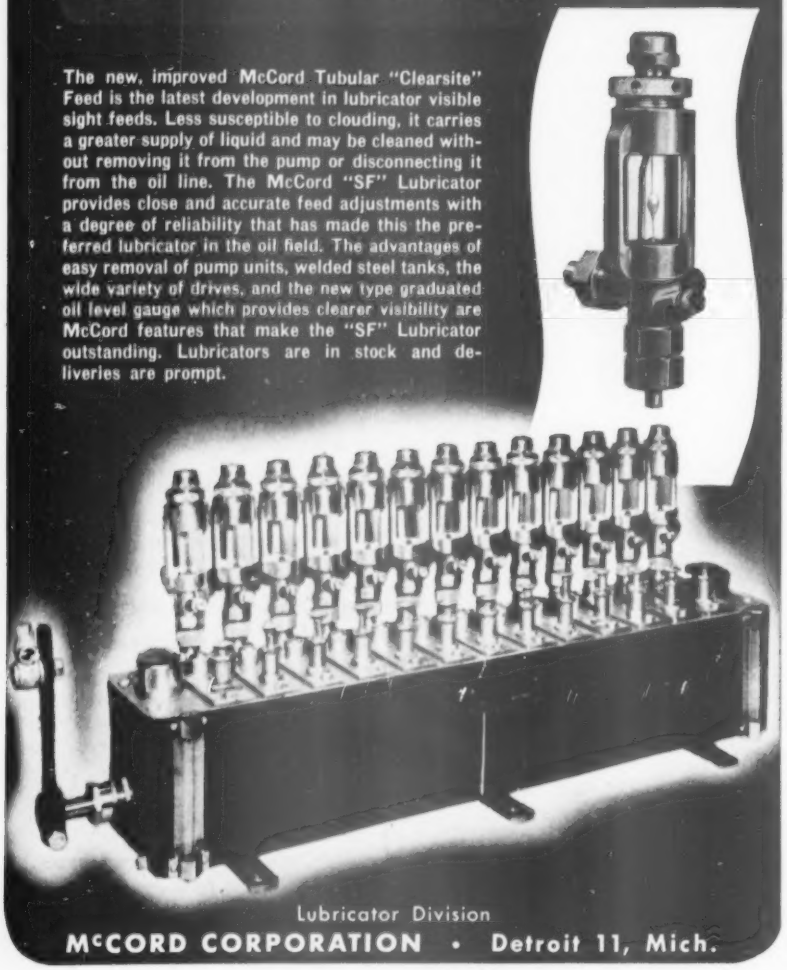
The working demonstration of Vickers' hydraulic steering system shows how the booster operates in serving oil-country trucks and mobile drilling rigs and similar equipment.



Typical installation of Vickers hydraulic power-steering booster on an automotive vehicle.

new McCORD
TUBULAR "CLEARSITE" FEED
SF LUBRICATOR

The new, improved McCord Tubular "Clearsite" Feed is the latest development in lubricator visible sight feeds. Less susceptible to clouding, it carries a greater supply of liquid and may be cleaned without removing it from the pump or disconnecting it from the oil line. The McCord "SF" Lubricator provides close and accurate feed adjustments with a degree of reliability that has made this the preferred lubricator in the oil field. The advantages of easy removal of pump units, welded steel tanks, the wide variety of drives, and the new type graduated oil level gauge which provides clearer visibility are McCord features that make the "SF" Lubricator outstanding. Lubricators are in stock and deliveries are prompt.



Lubricator Division
McCORD CORPORATION • Detroit 11, Mich.

Victaulic Co. of America
Elizabeth, N. J.
90 Texas Building

In attendance

M. C. HUTCHINSON, R. W. ENGLISH, A. G. BALDWIN, G. N. LAMONT, V. P. MAHON, M. R. HUFFMAN, H. D. SQUIBB, J. E. ST. CLAIR, W. VAN MEURS, E. S. HOLLEY, C. T. BRADLEY.

This exhibit features a diversified and complete method of piping, incorporating the following Victaulic products:

Couplings, for pressure or vacuum, from ¾-in. through 60-in. full-flow elbows, tees, caps, reducers, reducing tees, laterals, crosses, nipples, and other fittings in sizes ¾ in. through 12 in. Tools for on-the-job grooving of pipe which operate manually or from power sources such as hub drive of gang-truck; sizes ¾ in. through 6 in. A new and speedy boltless coupling. Couplings for plain or beveled end pipes; sizes 2 in. through 6 in.

Victaulic, Inc.
Los Angeles, Calif.
90 Texas Building
(See Victaulic Co. of America.)

Victory Supply Co.
Tulsa, Okla.
28 Scientific and Technical Building

In attendance

WILLIAM GLAZER, MORRIS GLAZER, C. LEWIS MIMS, W. D. TAYLOR.

This service organization is making available its personnel for discussions on products it handles.

Viking Pump Co.
Cedar Falls, Iowa
57 California Building

In attendance

STANLEY PETERSEN, VERNON PETERS, JOY BOYENGA, GLEN WARD, MARVIN CALVERT, RICHARD PARKER, O. W. PHILLIPS.

A new mechanical-seal-equipped Viking pumping unit is being shown in cutaway section. To illustrate the operating principle of Viking's rotary pumps, a unit with a transparent head is in actual operation. Large transparent colored reproductions are employed to illustrate various features of Viking's pumps which are applicable to operations in all divisions of the petroleum industry.

Vinson Supply Co.
Tulsa, Okla.
28 Scientific and Technical Building

Vinson Supply Co.'s exhibit includes a display of the principal items it handles, among which are Fisher controllers, Crane valves and fittings, Ladish forged-steel fittings and flanges, Nordstrom plug valves, and National Tube Co. items.

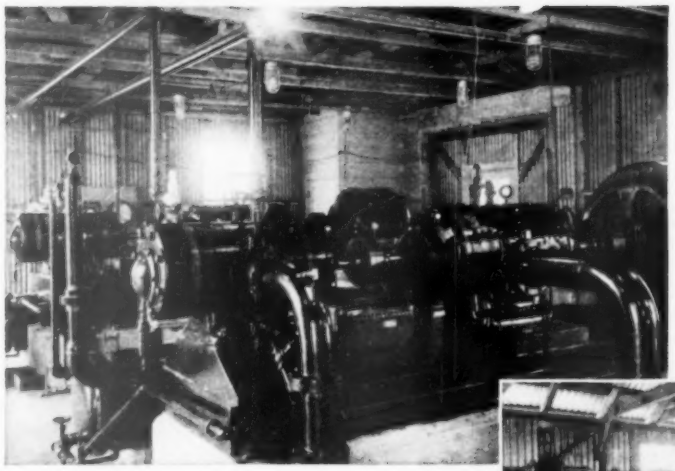
Focal point of the display is a picture map of the company's coverage of the Southwest in the piping and controls field.

Visco Products Co.
Houston, Tex.
73 Kansas Building

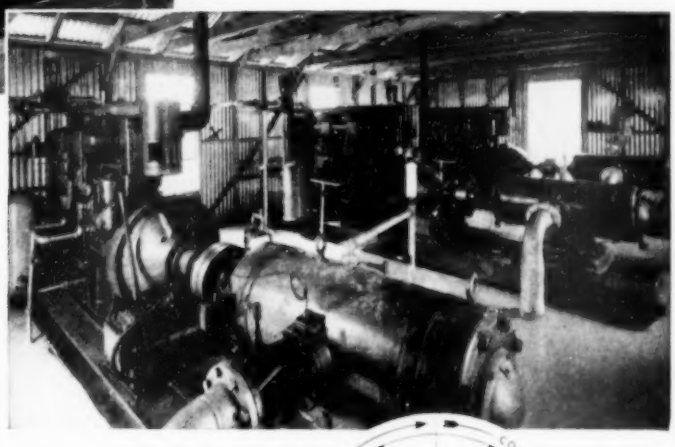
In attendance

C. F. SPANGLER, D. M. JACKS, W. H. KIRKPATRICK, F. E. COCHRAN, C. L. WALLACE, M. P. HILBUN, R. H. STEWART, E. E. FERGUSON, L. A. WALLACE.

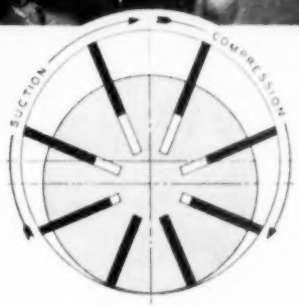
This company provides services in the fields of corrosion, desalting, demulsification, paraffin handling, and the like. On hand at Visco Products Co.'s exhibit are specialists in these fields who are available for consultation.



Two Fuller rotary two-stage gas boosters, each handling 1,500,000 SCFD, with atmospheric inlet pressure, or 2,500,000 SCFD, 10 psig. inlet pressure can be handled compressing to 70 psig. discharge, electric motor drive.



Three Fuller rotary single-stage natural gas boosters, capacity each 1,430,000 cu. ft./24 hrs. from 5-lb. to 25-lb. gage, driven by Climax gas engine.



BOOSTING GAS?
with FULLER rotary compressors
IT NEED NOT BE COSTLY

Fuller Rotary Compressors for booster service have many advantages that warrant your closest examination, whether for field boosting or to trunk-line levels. You'll find these units do a better job . . . better because they reduce maintenance cost, cut inspection time, last longer, do the job efficiently.

They're sturdy, dependable, because they have a minimum of moving parts—rotor, bearings, blades—requiring minimum attention. No valves to leak, no seats to grind; blades automatically compensate for wear, *maintaining capacities for the life of the machines.*

No detail has been overlooked that will make for long-term, trouble-free service, at the lowest maintenance and operating cost. These features explain why Fuller boosters do an outstanding job wherever gas is handled. For detailed information on Fuller Rotary Compressors, that will do a better job for you, write for Bulletin C-5A.

FULLER COMPANY—CATASAUQUA, PA.

Branch offices

Chicago—San Francisco—Los Angeles—Seattle—Birmingham

Fuller

PIONEERS OF HIGH-EFFICIENCY VANE-TYPE ROTARY COMPRESSORS

C-238
2155

I.P.E. EXHIBIT DIRECTORY

Henry Vogt Machine Co.
Louisville, Ky.
13-14 Oklahoma Building
In attendance

The general line of drop-forged steel valves, fittings, and flanges manufactured by Vogt, are on display. Featured are Vogt's new union-bonnet, bolted-gland, gate valves, in size range from ¼ to 2 in. This outside screw and yoke valve is rated for service up to 800 psi. and is adaptable to oil operations.

Two sectioned units, a heat exchanger and a double-pipe, scraped-surface chiller, are displayed to demonstrate constructional and operational features.

J. H. H. Voss Co.
New York, N. Y.
16 Park Lane
In attendance
KARL SCHARTEL

Exhibited is the full line of Voss Co. compressor valves.

E. H. Wachs Co.
Chicago, Ill.
Block 207
In attendance
EDWARD H. WACHS and E. W. KLYCE.

Among the items displayed at this exhibit

Cutting a "full-line" with a Wachs pipe saw.

is a Wachs-National pipe saw in operation. To demonstrate the machine a piece of 16-in.-diameter steel pipe is being cut and beveled. The exhibit features the Wachs-Safety vault cover and Weld + Ends couplings. Large photographic murals show the pipe saw making cuts on crude-oil pipe lines under hazardous conditions with the line full of oil.

Wagner Electric Corp.
St. Louis, Mo.
35-36 California Building
In attendance

L. J. DICIANNE, A. B. EMRICK, J. R. SHOUP, N. G. ALVIS, A. C. ALLEN, H. B. NECHEMIAS, R. VASSIER, A. G. VIOLA, F. H. VOCKS, L. E. LONG, L. C. DOBRUNZ, F. B. MINX, H. H. NELSON.

This exhibit features a moving model of an oil-well pump, flanked by Wagner transformers.

In addition, various other Wagner products are shown including a 3-hp., single-phase, oil-well pumping motor; a large, cast-iron-frame protected motor; two small cutaway motors; and two 10-kva. transformers, one oil filled, one dry type.

Walco Engineering & Construction Co.
Tulsa, Okla.
222 Oklahoma Building
In attendance

PAUL C. WALLACK, C. W. FRANK, M. E. FOX, NORMAN K. RECTOR, W. R. PEEVY, A. R. ALEXANDER, P. H. CAPPS, W. A. JENNINGS, R. A. GUND.

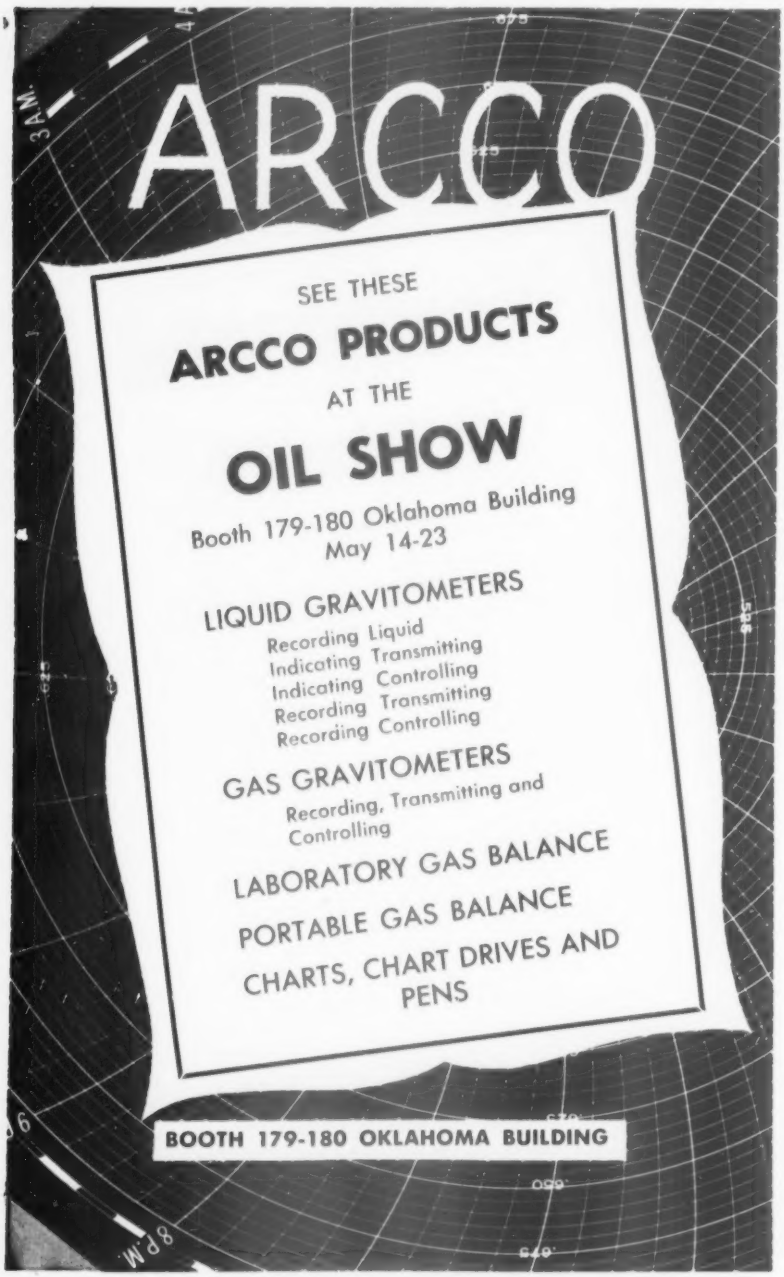
Technical and other personnel are on hand to discuss Walco's services.

Waldes Kohinoor, Inc.
Long Island City, 1, New York
66N North Area
In attendance

H. F. BOWER, JOHN PETRIE, CARL BENSON, BILL DABNEY, H. SNYDER, DON BRUNER, BEN H. GERKER.

The importance of retaining rings as a means for fastening and securing assembled machine parts is highlighted at the Waldes Truarc retaining-ring exhibit. All currently produced types of Truarc rings, in representative sizes ranging from ⅜-in. to 20-in. diameters, are displayed. In conjunction with Truarc rings, a special recessing tool is being demonstrated. Visitors are given the opportunity to demonstrate for themselves the new Truarc E-Ring Dispenser.

John Waldron Corp.
New Brunswich, N. J.
1-2 Scientific and Technical Building
In attendance
H. A. ANDERSON.
(See Allied Bearings Supply Co.)

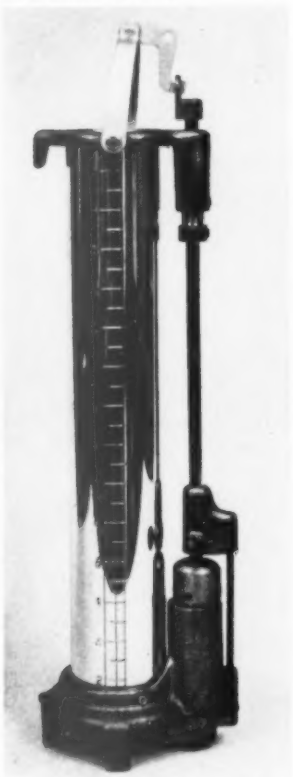


W. L. WALKER

Tulsa, Okla.

Front of Scientific and Technical Building

This exhibit includes a line of tank-gaging and associated equipment. Shown is a spark-proof oil thief with a self-grinding valve seat, along with a gaging reel having trigger-controlled automatic braking action and neoprene wiping pads. In addition, an aluminum gager's equipment case and two types of lined hydrometer cases are displayed. The other Walker products shown are a strapping pole which facilitates tank-strapping operations and a 6-volt centrifuge machine for field operation from an automobile battery.



W. L. Walker Co.'s oil thief.

Walker-Neer Manufacturing Co., Inc.

Wichita Falls, Tex.

Block 202E

Walker-Neer spudder in action in Oklahoma.

In attendance

JACK NEER, BILL WALKER, JR., RAY GARDNER

Walker-Neer is showing two of its machines. Featured is a new model which is equipped with full-width drums to eliminate building up and cutting in of wire lines. Design of both machines incorporates the company's own shock absorbers, antifriction bearings, and separate controls for each drive.

Wallace Supplies Manufacturing Co.

Chicago, Ill.

251 Oklahoma Building

This company is displaying three specific formulations of Zincilate, a corrosion-resistant coating compound. The coating utilizes the sacrificial quality of zinc for corrosion protection to steel. Application can be made by spray, brush, or dip, and with ordinary equipment as manufactured by many applicator firms.

I.P.E. EXHIBIT DIRECTORY

Walworth Co.

New York, N. Y.

103-108 Oklahoma Building

In attendance

A. J. EICHLER, F. W. BELZ, H. STRAUSS, W. M. COMBS, C. G. FINKLE, E. L. CLARK, F. S. MARKLE, R. W. HENSON, R. S. FRAYSIER, J. L. RICE, G. A. FERRELL, W. H. WEBER, O. E. DUEMLER, A. C. WADSWORTH, J. E. SITTERDING, G. R. THOMSON, A. V. MARTIN, R. S. WITHERELL, FRED KRUMMEL, RALPH THOMAS.

Walworth Co. is featuring one of its 24-in. steel pipe-line gate valves in complete opera-

HERE'S IMPORTANT NEWS FOR YOU!

WALJOHN PLASTICS, Inc.

(INDUSTRIAL DIVISION)

proudly introduces a New Plastic Pipe

"WALPIPE"* — *the Plastic Pipe of Character*

*Made of ALL VIRGIN TENITE II, according to rigid engineering specifications, with fittings to match. Delivery to start May 25, 1953.

FREE: Send for our Booklet, "Facts You Should Know about Plastic Pipe." Fresh off the press, it gives all the very latest information to help you in your selection, installation and use of plastic pipe. Send for it today!

TERRITORIES ARE NOW OPEN FOR DISTRIBUTORS, DEALERS & SUPPLY HOUSES

CONTACT US.

Waljohn Plastics, Inc. (Industrial Division)
435A 88th Street, Brooklyn 9, N. Y.
Gentlemen: Please send me your FREE informative Booklet, "Facts You Should Know About Plastic Pipe."

Name

Company Title

Street

City Zone State

WE'LL BE EXPECTING YOU AT THE

OIL SHOW

Here is where the latest in oil field equipment, manufactured by HERCULES TOOL COMPANY, will be displayed at the Petroleum Exposition. Look for us in the California Building. Our Representatives will be on hand to serve you throughout the show.

HERCULES RED TOOLS "Designed to Stand Out — Built to Stand Up"

HERCULES TOOL COMPANY

OIL FIELD EQUIPMENT

GENERAL OFFICES AND PLANT: TULSA, OKLAHOMA

EXPORT REPRESENTATIVE: OIL FIELD EQUIPMENT CO., INC. • 30 CHURCH STREET, NEW YORK, N. Y.

tion by means of a Limitorque electric-motor operator. This valve weighs approximately 10,335 lb. Also exhibited is a Walworth 24-in. Series 600 lubricated plug valve equipped with compound gearing. Shown in addition are Walworth's general line of bronze, iron, cast-steel, and lubricated plug valves plus lubricants and a high-pressure lubricating gun.

Walker Well Heads, Inc.
Tulsa, Okla.
40 Silver Lane
In attendance
HAROLD F. MACDOWELL, D. C. WALKER, J. A. BECKER, T. D. EALEY, JOE L. ROBINSON, JERRY WALSH, PAUL C. SMITH, TOM HARRELL.

This company is showing a comparatively new line of well heads of its own design and manufacture. Four types of these well heads are exhibited.

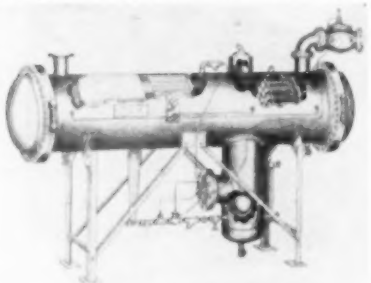
Stripper-rubber equipped Walker well head.

Wall Rope Works, Inc.
New York, N. Y.
27 Texas Building
J. L. DITTMAN, G. C. TERRY, JOHN T. ROBINSON, H. P. WALL.

Wall Rope Works, manufacturer oil-well cordage, is showing its Black Gold catlines. Walls's oil-field-cordage display also includes crackers, derrick lines, and bull ropes, all of which now bear the company's gold on black outside markers.

Warner Electric Brake & Clutch Co.
Beloit, Wis.
235 Oklahoma Building

Warner Lewis Co.
Tulsa, Okla.
46-59 California Building
In attendance
J. J. KROPP, Allied Oil Equipment Co.; RALPH ROBB, Blott-Robb Co.; CARL DAVIS, Davis & Davis; J. N. FITZGERALD and HOWARD H. HEILMAN, Warner Lewis Co.; JAMES S. KONE, James S. Kone & Co.; E. W. KUSH, Mountain Region Supply Co.; LEWIS C. DALTON, Southern Co.; FRANK NEIL, Marshall, Neil & Pauley, Inc.



Warner Lewis filtering unit.

This company, manufacturers of water separators, filters, combination separator-filter-air-eliminator units and meter calibrating tanks, is featuring a ceramic-coated combination unit. Designed to remove water and dirt from aviation fuel, the unit is rated at 225 g.p.m.

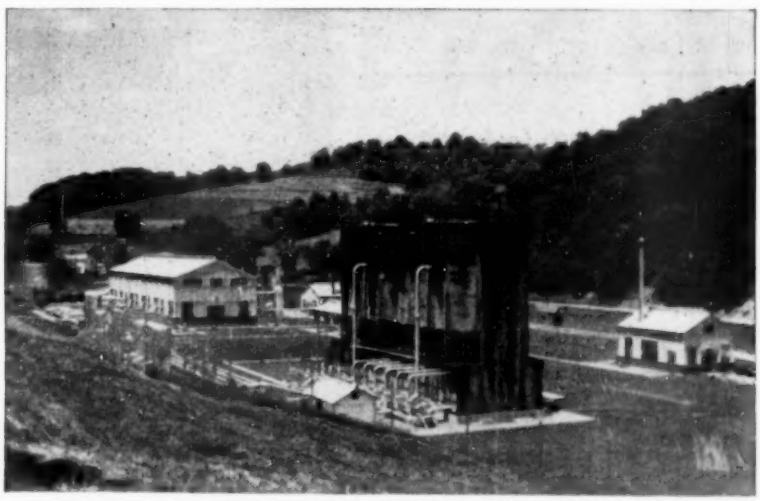
Warner & Swasey Co., Gradall Division
Cleveland, Ohio
Block 206
In attendance

I.P.E. EXHIBIT DIRECTORY

I. T. WHITE, H. A. KRAUS, STAN ADAMS.

Warner & Swasey's exhibit features the Gradall unit, a multipurpose unit, designed

Multipurpose Gradall machine.



Preston Station, near Waynesburg, Pa., one of the compressor plants of the New York State Natural Gas Corporation.

THE PICTURESQUE AND EFFICIENT PRESTON COMPRESSOR STATION OF

New York State Natural Gas *Uses* FLORITE

A showplace for sightly layout and natural beauty of surroundings, the Preston compressor plant of New York State Natural Gas Corporation is also a model of advanced methods and efficiency. It is one of several stations operating at very high pressures in the great hookup that delivers Texas gas to cities in the Rochester-Syracuse region of western New York, and has an uncommon record of freedom from accidents or delays. Gas is dehydrated by two contact towers employed alternately in a 24-hour cycle, one being regenerated while the other is in use. The drying agent is Florite, and the volume of gas processed daily is 160 million cubic feet.

Florite will selectively adsorb 4 to 20% its weight of water—is regenerated by heating to 350° F. Write for literature.

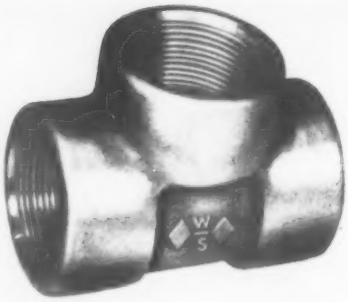
FLORIDIN COMPANY ADSORBENTS DESICCANTS DILUENTS

Department C. 220 LIBERTY STREET WARREN, PA.

to handle all kinds of construction work. The cab, boom, and power unit are mounted on a 360° rotating platform. Remote control is available as optional equipment. The 24-ft. boom telescopes to 12 ft. and may be tilted 45° either way from center. Dumping height is 14 ft. 9 in. and digging depth 10 ft. with 11-ft. working clearance. The machine's 16 different attachments can be interchanged in less than 5 minutes.

Watson-Stillman Fittings Division
H. K. Porter Co., Inc.
Roselle, N. J.
Block 5

This company is exhibiting its new line of pipe fittings and a portable air pump.



Watson-Stillman new forged-steel fitting.

Socket-welding-type fittings are of stainless, carbon, and alloy steels and cover a wide pressure range. Screwed-type fittings are also displayed in pressure ranges from 2,000 to 6,000 psi. These are also of stainless, carbon, and alloy steels.

Another display covers the company's line of Featherlite forged-stainless-steel lightweight fittings in screwed and socket-welding types.

The air-engine pump being shown is portable. Pressure ranges are 2,000, 4,000, and 6,000 psi.

Waukesha Motor Co.
Waukesha, Wis.
Block J

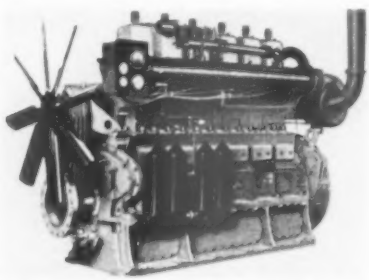
In attendance

J. E. DELONG, J. G. SWAIN, F. C. SCHULTZE, G. A. DUNCAN, F. GUNTHER, L. L. BOWER, E. R. RUTENBER, H. WILES, W. KLATT, J. R. MERRIAM.

Waukesha is exhibiting nine of its typical oil-field power units. Included are a large natural-gas engine of 3,520 cu. in. displacement equipped with hydraulic coupling along with two turbo-supercharged diesels equipped with torque converters. The diesels are 2,894 cu. in. and 1,197 cu. in displacement units which develop respective maximum horsepower of 475 and 327.

Other units, for operation on propane-butane or natural gas, are also being shown. Ratings on these units are 1,905 cu. in. displacement with 270 maximum horsepower; 779 cu. in. displacement with 184 maximum horsepower; 451 cu. in. displacement with 118 maximum horsepower; and 144 cu. in. displacement with 30 maximum horsepower.

A new Waukesha 135-Series diesel unit is also displayed. Rating on this new diesel is 426 cu. in. displacement with 116 maximum horsepower. All units are production-line models equipped with varying power takeoffs and oil-field accessory equipment ready for immediate oil-field service.



Waukesha six-cylinder unit developing 570 hp. at 1,200 r.p.m.

Weatherhead Co.
Cleveland, Ohio
8-9 Silver Lane

Weatherhead Co.'s hose-maintenance kit.

Petroleum Lab Men specify precision

DESPATCH OVENS

DESPATCH LABORATORY and PRODUCTION OVENS for the petroleum industry are ideally suited to all types of research . . . testing . . . production control. They provide the closest heat uniformity through every inch of the work chamber . . . consistently accurate temperature control at all heats . . . ample speed to process capacity loads at any desired operating temperature. Available in 8 models. Write for information on hazard-safety installations. *Ask for bulletin.*

- Air velocity control
- Guaranteed heat elements 2.7 to 36 KW
- Precision indicating control
- Accurate—speedy—rugged

Ovens on Display at the INTL. PETROLEUM EXP. May 14-23, Tulsa
Represented by: Thomas Engineering Co.

Manufacturers of Ovens for All Purposes

DESPATCH OVEN CO. Established in 1902

389 Despatch Building
Minneapolis 14, Minn.

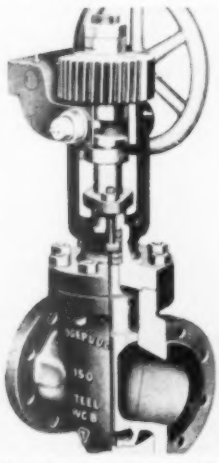
The company's newest development in its line of maintenance kits is a cabinet designed to stock heavy-duty hydraulic hose and reusable couplings for on-the-spot replacement of compressed air, hydraulic, fuel, and lubrication lines on oil drilling rigs and oil-field machinery.

Weatherford Oil Tool Co.
Houston, Tex.
104 Texas Building

Weatherford is showing its line of oil-field tools. Featured among the various items are "Lace-on" and straight centralizers, reversible scratchers, drill-pipe wipers and the company's "Barrel Rolled" tong-pull back springs.

Weatherford "Lace-on" spiral centralizer.

Wedgeplug Valve Co.
New Orleans, La.



Cutaway view of a worm-gear-operated 150-lb. Wedgeplug dry plug steel valve.

47N-48N North Area
In attendance
W. E. JONES, H. C. STOCKHAM, JR., WARREN N. PETRIE
(See Stockham Valves & Fittings Co.)

Welex Jet Services, Inc.
Fort Worth, Tex.
57-58 Texas Building
In attendance

R. O. SHAFFER, T. W. PAINTER, B. M. CALDWELL, J. B. VAUGHAN, W. O. SATTERWHITE, J. B. FLEMING, W. L. CARWILE, C. R. PARKER, T. R. WEYMOUTH, J. H. SMITH, W. D. SMITH, B. A. REDWINE.

This service organization is displaying its jet-perforating radioactivity well logging. Technicians are available at the location to discuss the company's various services.

I.P.E. EXHIBIT DIRECTORY

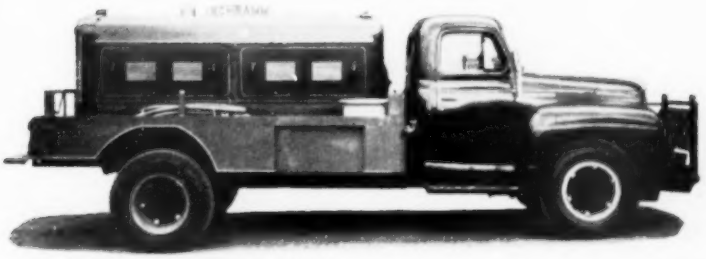
Well Equipment Manufacturing Co.
Houston, Tex.
101-103 Texas Building
In attendance

J. H. ROBINSON, JOHN W. GATES, FOSTER JORDAN, J. C. McCELVEY, I. D. ABSHIRE, W. H. BRIEN, R. L. GAMMILL, L. L. DURKIN, C. E. GISLER, C. J. HOLCOMB, W. C. MEEKS, JR., C. V. MARSHALL, D. E. OWENS, H. T. ROGERS, A. H. WATTS, T. R. SHIELDS, J. D. WATSON.

This company's complete line of wing-nut unions is being shown at its location, 101, 102, 103, Texas Building and at Chiksan Co.'s location 108-110 Texas Building.

Central theme of Well Equipment & Manu-

EXPLORE FOR OIL WITH AIR



WITH SCHRAMM AIR COMPRESSORS

These photographs show different mountings of Schramm Air Compressors. The truck below carries all equipment necessary for Shot-hole exploration.

Profitable Geophysical shot holes are being drilled with air furnished by Schramm Air Compressors. These specially designed compressors and accessories with BIG 3 drilling heads have been unusually successful in areas where other methods have failed or are much more expensive. Schramm Air Compressors can be mounted many different ways to fit your specific needs. If you are interested in lowering costs of exploration and improving efficiency, write today to

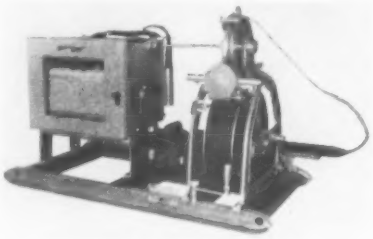
BIG THREE
WELDING EQUIPMENT CO.
P. O. BOX 1538 FORT WORTH, TEXAS

I.P.E. EXHIBIT DIRECTORY

facturing Co.'s union exhibit is a specially designed pyramid-style display of various size unions in a wide range of test pressures up to 15,000 psi. In addition to the unions, Weco's complete line of compounds is also on exhibit. These consist of its No-Gall, and Lo-Tork, tool-joint compounds, along with its Steel-Aid, thread compound, plus its Hi-Speed seal thread compound. Weco's drop-side snatch blocks and Weco drop-side tong line blocks are also displayed.

Well Equipment Manufacturing Corp.
Houston, Tex.
108-110 and 101-103 Texas Building
(See Chiksan Co.)

Well Instrument Developing Co.
Houston, Tex.
24-25 Science and Technical Building



View of Widco logger.

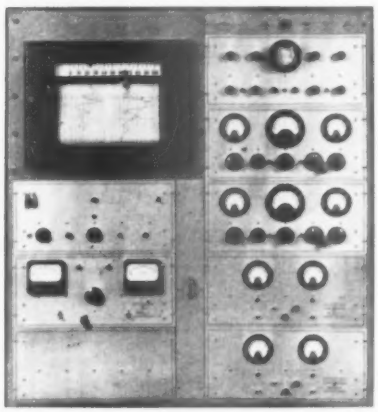
In attendance
HUBERT GUYOD, HARLO H. NELSEN, DEWEY J. SPARKS

Exhibited is a simple instrument for use by exploration crews, geologists, and others, for obtaining electric logs. Design features of the automatic, self-contained instrument are accuracy and light weight. Compactness and light weight permit the instrument to be transported into areas inaccessible to trucks or even passenger vehicles. The line of logging instruments covers a range from shallow shot holes to deep wells.

Well Surveys, Inc.
Tulsa, Okla.
77 Scientific & Technical Building

In attendance
C. E. DULLER, E. S. MARDOCK, GILBERT SWIFT, G. E. SYKORA, J. M. THAYER, A. H. YOUMANS.

New well-surveying instrumentation which provides both a gamma-ray curve and a neutron curve at the same time, is being displayed by this company. The gamma-ray curve, recorded on the left side of the chart, indicates class of rock through which the well has penetrated. The neutron curve, on the right of the chart, shows amount of fluid present. If the well is cased, each casing joint is shown on the log at its proper depth. Minute quantities of natural radioactive elements which are present in all rocks are detected in the gamma ray process. A strong artificial source of neutrons, lowered into the well along with the detecting instruments, furnishes the rays employed for the neutron curve. Radioactivity units of this new type are being operated by Lane-Wells Co., Western Co., and Welex Jet Services, Inc., under license of Well Surveys, Inc.



Well Survey's new dual-curve logging unit.

Westcott & Greis, Inc.
Division of American Meter Co., Inc.
Tulsa, Okla.
45-46 and 57-58 Science and Technical Building

In attendance
J. H. SATTERWHITE, H. W. WAHL, C. C. CLOVER, C. G. BRASWELL, W. N. DONACHY, L. V. HICKMAN, H. H. HOLMES, L. L. HOLT, C. J. KRIBS, G. M. LANE, VAL LINK, JR., A. J. SESOCK, W. H. SUMRALL, JR., S. C. WALKER.

Shown is a line of flow-measuring apparatus and accessories plus regulators and testing equipment in the flow-measurement field. This entire line is applicable to all branches of the petroleum industry. Displayed, in addition to flow-measuring and related equipment, are a sectioned relief valve, pressure gage, and pressure-gage testing device all produced by Crosby Steam Gage & Valve Co.

The recording orifice-metering equipment

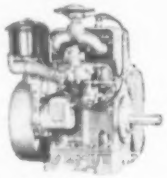
Where it's HOT, DRY and DUSTY

...WISCONSIN *Air-Cooled* ENGINES *Get the Nod*

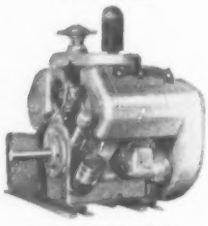
In localities such as the dusty, arid districts of southwestern Texas and the San Juan Basin of New Mexico where water is scarce, the temperature high, and the going is tough . . . Wisconsin Heavy-Duty Air-Cooled Engines are used *wherever* and *whenever* possible. Here is a typical application: Wisconsin V-type 4-cylinder Power Units operating pumps and agitators on tar pots, working on a new line in the Midkiff field, Upton County, Texas, where the El Paso Gas Company is engaged in one of the largest expansion programs in gas pipe-line history.

Wisconsin Engines are "making history" every day in the oil fields . . . delivering heavy-duty, trouble-free power service on every type of operation within a 3 to 36 hp. range. You can't do better than to specify "Wisconsin Engines" for *your* equipment.

4-cycle single cylinder 3 to 9 hp.



2-cylinder models 7 to 14½ hp.



Models VE-4, VF-4, VG4D, V-type 4 cylinder, 13 to 36 hp.

WISCONSIN MOTOR Corporation
MILWAUKEE 46, WISCONSIN
World's Largest Builders of Heavy-Duty Air-Cooled Engines

WRITE TO HARLEY SALES CO.
619 S. MAIN STREET, TULSA, OKLAHOMA
M & M BUILDING, HOUSTON, TEXAS
505 SOUTH MAIN ST., WICHITA, KANSAS
OIL FIELD DISTRIBUTORS FOR WISCONSIN ENGINES AND ALL TYPES OF UTILITY UNITS.

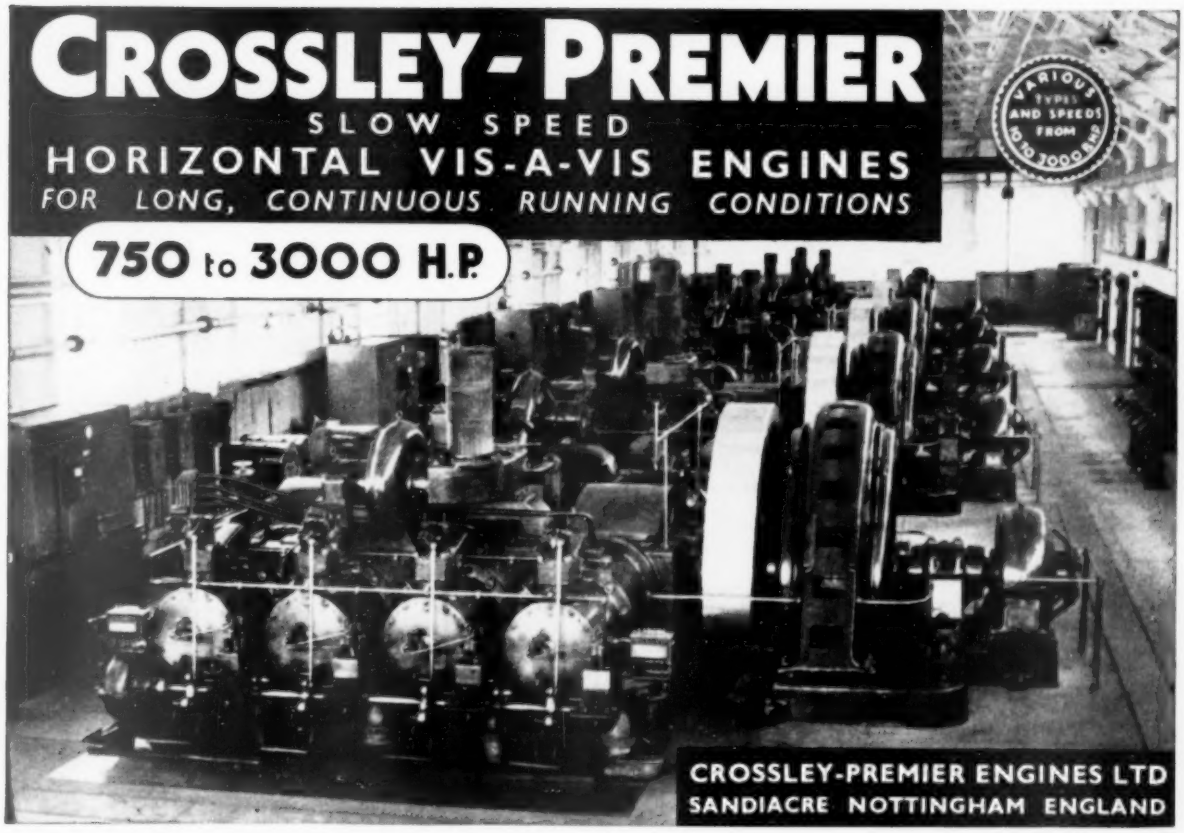
CROSSLEY-PREMIER

SLOW SPEED

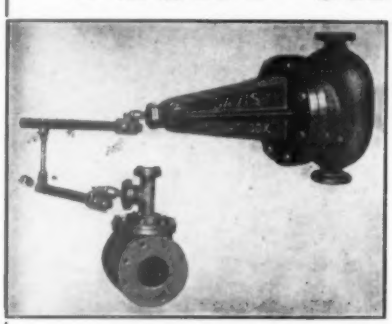
HORIZONTAL VIS-A-VIS ENGINES

FOR LONG, CONTINUOUS RUNNING CONDITIONS

750 to 3000 H.P.



FLOAT CAGES



• No. 161D Packless Float Cage actuating No. 66B Packless Balanced Valve.

FOR LIQUID LEVEL CONTROL SERVICE

DAVIS Float Cages are used in connection with closed tanks where fluctuation of the fluid level within the tank is the governing factor in the control of all types of electrical switches, control valves, pilot valves (for operation of diaphragm motor valves), motors and other equipment. Davis fluid control equipment also includes internal float units for direct or pilot operation. Whatever your requirement may be, Davis can supply you with a combination of float cage and control valve to make your control accurate, positive, and dependable.

Drop us a card today for detailed information on the Davis line. Ask for Bulletin 101AA.

Davis

DAVIS REGULATOR COMPANY

2543 So. Washtenaw Ave., Chicago 8, Ill.

dependable

FRONTIER

caustic soda
(FLAKE, SOLID, LIQUID)

muriatic acid

chlorine

oil well and industrial salt

FAST TRUCK OR RAIL DELIVERIES ANYWHERE IN THE ROCKY MOUNTAIN, MID-CONTINENT AND SOUTHWEST AREAS

GEARED TO SERVE THE OIL INDUSTRY

ELECTRO-CHEMICAL

Frontier Chemical Company

MANUFACTURERS

GENERAL OFFICES
321 WEST DOUGLAS
WICHITA, KANSAS
PHONE 7-5215

Wichita, Kansas • Denver City, Texas • Midland, Texas • Denver, Colorado

Roads or No Roads...

The 'Jeep' Goes Through When Others Can't!

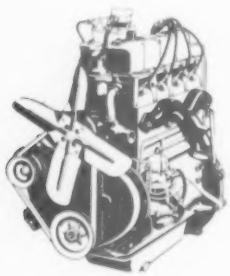
Where there's a Universal 'Jeep' there is always a way to get through—even to the most remote locations.

'Jeep' 4-wheel-drive traction is the difference between pulling through and being pulled out . . . between gaining ground and losing time. That is why the 'Jeep' outperforms ordinary vehicles in oil fields everywhere.

With its all-wheel traction and *Hurricane* Engine power, the 'Jeep' travels the roughest and muddiest oil country . . . it climbs grades up to 60 percent. And the 'Jeep' is built to stand up under grueling day in and day out service.

Ask your Willys dealer to demonstrate the "go-anywhere" ability of the Universal 'Jeep'. Get all of the facts.

4-WHEEL-DRIVE UNIVERSAL 'Jeep'®



HURRICANE F-HEAD ENGINE

Power increased 20 percent—a big decrease in fuel consumption—that's the result of Willys sensational *Hurricane* Engine. It's of F-head design with valve-in-head intake and valve-in-block exhaust. Compression is 6.9 to 1, but it does not require premium fuel.

WILLYS-OVERLAND MOTORS, TOLEDO 1, OHIO • WORLD'S LARGEST MAKERS OF 4-WHEEL-DRIVE VEHICLES

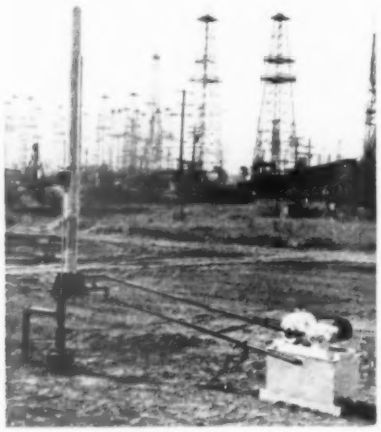
being shown include mercury and bellows types in various ranges of working pressures. An exhibit of rate-of-flow controllers includes several types. Shown in addition are transmitters and receivers for remote recording of flow, temperature, or temperature data. A speedometer-type counter for remote systems is also being exhibited. The line of transmitters and receivers is adaptable to telephone communication circuits.

Other items on display are recording differential valves, recording gas-lift meters, regulators for natural gas and L.P.G. services.

Western Design & Manufacturing Corp.
Burbank, Calif.
17 Park Lane

In attendance
D. E. GILLUM, J. C. CAREY, S. G. SMITH.

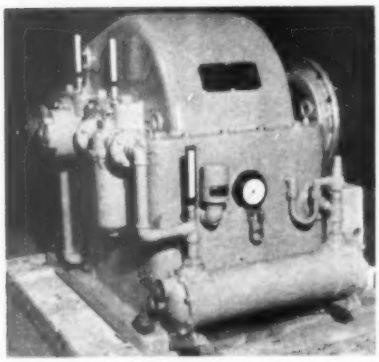
This company is showing a clear-plastic working model of its new hydraulic pumping jack for stripper wells. The unit mounts on the well head requiring no foundation or tie-down points. Polished-rod alignment is built into the mounting and all connections and adjustments can be made from the ground. A thermostat and float switch in the oil reservoir prevent excessive heating or loss of the hydraulic oil while a standard, truck-type oil filter keeps sludge and foreign matter out of the system. To minimize oil leaks only one sliding pressure seal is used. Offset construction prevents contamination of the hydraulic fluid by crude oil on the polish rod.



Western Design & Manufacturing Corp.'s Hydra pump.

Western Gear Works
Lynwood, Calif.
4-5 Park Lane

In attendance
RON HINMAN, JESS BAILEY, WARREN CARHART, PAUL MARMONT



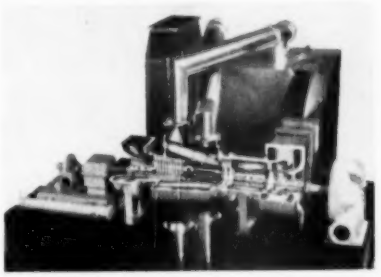
High-speed power-transmission unit.

Western Gear Works is featuring its high-speed, power-transmission unit of the type commonly applied in operations of pipe-line pumping stations. In addition, working models of various other Pacific-Western power transmission units, designed for application in the petroleum industry, are being shown. Included are high-speed units, torque converters, and speed reducers.

Westinghouse Electric Corp.
Pittsburgh, Pa.
91-93 and 118-120 Oklahoma Building

In attendance
I. H. COEN, E. L. HATHAWAY, C. L. SUHRSTEDT, F. E. O'MEARA.

Simulated operation of remote control of pipe-line pumping stations is being shown by Westinghouse Electric Corp. Visicode-P supervisory control and 2,000-megacycle microwave equipment is used with a mockup of the

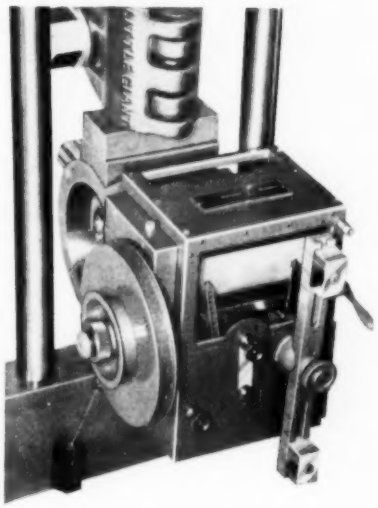


Sectioned model of Westinghouse Electric Corp.'s gas turbine.

KNOW THE FACTS...

Improve Your Pumping Wells!

J-F DYNAMOMETER *tells how...*



. . . production is increased with operational control! The J-F Dynamometer enables checking of pumps at surface; reduces number of sucker rod failures by determining the most favorable operating speed and stroke. It reveals poor counterbalance, thus extending the life of the prime mover and gear box; aids the operator in selecting proper equipment. Decreased downtime and fewer pulling jobs mean more production at less expense.

J-F DYNAMOMETER WIDELY ACCEPTED!

The effectiveness of the J-F Dynamometer is proven by the fact that it is one of the few instruments of scientific control so widely used on pumping wells. The chief reason is that the J-F Dynamometer is simple to use and may be operated by non-technical personnel.

See Our Exhibit—International Petroleum Exposition—Booth Directly Behind Kansas Building

JOHNSON-FAGG

Engineering Company

3920 South Peoria — Tulsa, Oklahoma

AMPCO® welcomes the Oil Industry To Tulsa

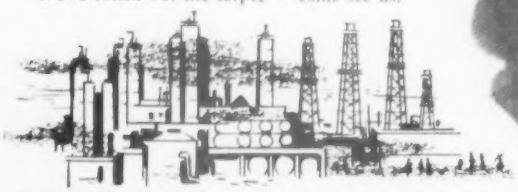
Call on us when you reach the Oil Show.

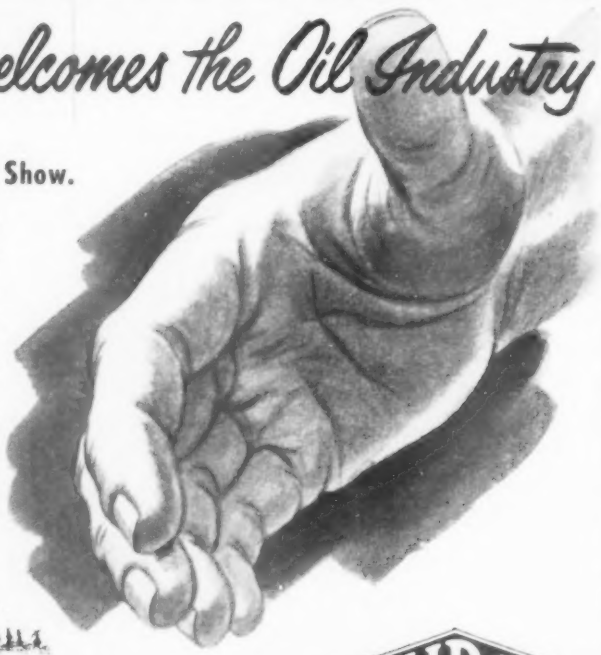
Visit Booths 32, 33 and 34 in the California Building. See a practical on-the-spot demonstration that should be of great interest to you — a demonstration of the ability of Ampco Bronze alloys to resist corrosion.

Because of Ampco's ability to resist corrosion, erosion, and wear, it is used for sucker rods, sucker-rod guides and assemblies, polished rods, well tubing, salt-water disposal equipment, ring joints, gaskets, fractionating towers, and many other applications important to oil-field and refinery service.

See Ampco Pumps made of corrosion- erosion-resistant Ampco Bronze Alloys — and safety tools for use in hazardous places.

We've rolled out the carpet — come see us.



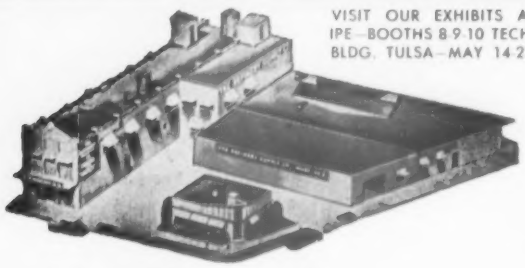


Ampco Metal, Inc., Milwaukee 46, Wisconsin

"AMPCO-ize to Economize"

AMPCO

PR-3A



VISIT OUR EXHIBITS AT THE IPE—BOOTHS 8-9-10 TECHNICAL BLDG. TULSA—MAY 14-23

Manufacturers and Jobbers

of

Scientific Instruments

Manufacturers of

Ac-Me and R. S. Specialties

Ac-Me RECORDING GRAVITOMETER
Ac-Me SPECIFIC GRAVITY GAS BALANCE
Ac-Me PRESSURE VACUUM PUMP
R. S. PORTABLE VACUUM PUMP
R. S. MERCURY CLEANER
R. S. MANOMETER
R. S. DEAD WEIGHT GAUGE
R. S. DEAD WEIGHT TESTER
R. S. ORIFICE WELL TESTER
R. S. MOISTURE TESTER

R. S. FLAT BORE YEL-O-BAK THERMOMETERS
R. S. STREAMLINED HYDROMETERS
R. S. PULSAMETER
R. S. PRESSURE HYDROMETER JARS
R. S. VAPOR PRESSURE BOMB
R. S. DIAMOND CORE DRILL
R. S. THERMO PLUMB BOB THERMOMETERS
R. S. THERMOSTAT TEMPERATURE CONTROLS
R. S. HIGH PRESSURE CONSISTOMETER
R. S. SMOKE METERS

Write for Bulletin No. 50

Complete Line of Scientific Laboratory Equipment

Also Complete line of CENTRAL SCIENTIFIC SPECIALTIES

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Cenco . . . one dependable source of supply for everything you need in scientific instruments and laboratory supplies. Over 15,000 items . . . 14 branch offices and warehouses.

R.S.C. TULSA

REFINERY SUPPLY COMPANY
621 EAST FOURTH STREET • TULSA 3, OKLAHOMA
2215 McKINNEY AVENUE • HOUSTON 3, TEXAS

CENTRAL SCIENTIFIC COMPANY
1700 IRVING PARK ROAD • CHICAGO 13, ILLINOIS
CHICAGO NEWARK BOSTON WASHINGTON DETROIT SAN FRANCISCO
SANTA CLARA LOS ANGELES TORONTO MONTREAL VANCOUVER OTTAWA

controlled and controlling stations, to approximate actual operation.

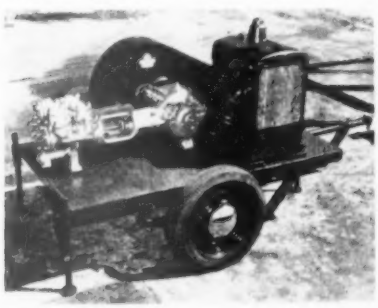
Also shown are two cutaways of model gas turbines for pipe-line pumping and a mockup of an electrified oil-well pumping installation. Other displays include a cutaway of a speed increaser, a line of motors from ½ to 3,000 hp. for use in hazardous locations, a portable engine-driven welder and other welding equipment for field repair work, a complete line of oil-immersed and explosionproof controls, and the latest industrial-lighting equipment.

Frank Wheatley Pump & Valve Manufacturer
Tulsa, Okla.
Block T and Adjacent Area

In attendance

FRANK WHEATLEY, SR., FRANK WHEATLEY, JR., BILLY GRAY, GUS BAKER, HUBER DYE, CHARLES WHEATLEY, BOB FISHER, DUCK RICHARDSON, "HACK" HACKENJOS, PAT PATTERSON, HAROLD PUTNAM, JIM WITHERS, GLEN TAYLOR, ED NOLAN, LLOYD GRAY, JOHN FITZPATRICK, ORBIE SUMNER, DON FRY.

Wheatley is displaying its complete line of pumps ranging form 3 to 10-in. stroke, and having from two to five cylinders, with a range of horsepower from 3 to 400. Supplementing the pump display is Wheatley's line of new check valves.



Wheatley's compact, trailer-mounted, reciprocating-pump unit powered by a LeRoi engine.

Wheeling Machine Products Co.
Wheeling, W. Va.
21 Park Lane

White Motor Co.
Cleveland, Ohio
Block 102

In attendance

R. F. BLACK, J. N. BAUMAN, H. R. STICKEL, F. S. BASTER, L. A. FLEENER, HORACE MOSTELLER, W. L. HENRY, H. A. FARR, J. C. TULK, LEE COPPEL, The White Motor Co.; and BENNETT BOND, White Truck Sales Co.

White is exhibiting a number of its latest truck models, engineered for various oil-field applictions. The units exhibited include one equipped with rigging for oil-field work, plus an airport petroleum tanker unit and a Sterling-White unit also fully rigged for oil-field service.

Whitmor Homebuilders, Inc.
Tulsa, Okla.
35 Park Lane

In attendance

M. W. TURNER, BURL JOHNSON, RUSSELL E. RENFROW, H. E. WICKER, E. R. BLAIR, JR., WALTER STEPHENS, HARRY HAMILTON, OSCAR OLIVER, HERBERT HOLLOWAY.

In addition to its exhibit at 35 Park Lane where complete information is available on industrial housing units, Whitmor Homebuilders is exhibiting a completely air-conditioned replica of one of its modern field homes. This exhibit is located at 4142 East Twenty-first Street, just a block away. The building is completely finished except for one bedroom which is only partly completed to show structural members, insulation, and general design.

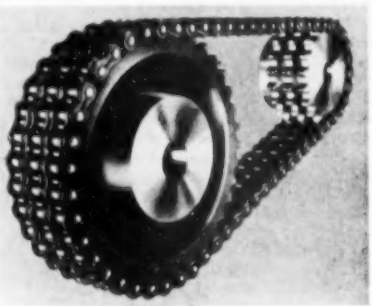
Whitney Chain Co.
Hartford, Conn.
74-75 Kansas Building

In attendance

J. W. ANDERSON, H. W. BEDER, JR., E. T. TEAL, H. C. MALLDER, A. J. SWISLER, G. A. BANTON, M. H. BREDAHL, L. H. WHITNEY, J. F. RONDINONE, W. S. HORSEFIELD, E. P. CODY, R. L. ACTON, R. W. BRANCH, G. E. TINSLEY.

Exhibit includes products of Whitney Chain

I.P.E. EXHIBIT DIRECTORY



Whitney roller-chain and sprocket assembly.

DANGER! A BEACON LAMP JUST FAILED!
warns the new H. & P. Automatic Alarm System for Tower Lighting
H&P
AND THE WARNING GOES STRAIGHT TO CENTRAL CONTROL
NO. 4 BEACON OUT...
A PACKAGED UNIT—The inexpensive H. & P. system is packaged in a single streamlined housing, and is designed for easy installation and maintenance.
WHAT IT WILL DO—It triggers an alarm signal, via micro-wave, in the event of any light failures. It indicates location, and whether Beacon or obstruction lights (or both) have failed. Also signals power failures in the antenna lighting circuit. Write for complete information, and name of nearest distributor
FCC REGULATIONS REQUIRE either a daily inspection of all tower lights—or the installation of a dependable automatic alarm system to signal light failures. FCC also requires the immediate reporting of all light failures. With stations in difficult terrain, a daily light inspection by personnel is costly. And full compliance is nearly impossible: 24 hours could elapse before discovering a light failure!
HUGHEY & PHILLIPS Automatic Alarm System pays for itself in a few months because personnel inspection costs are virtually eliminated. FCC compliance is assured because all light failures are immediately recorded at the control station.
HUGHEY & PHILLIPS
Tower Lighting Division
Encino, California
LEADERSHIP IN THE FIELD OF TOWER LIGHTING EQUIPMENT

I.P.E. EXHIBIT DIRECTORY

Co. and its associated company, Hanson-Whitney Division. Whitney's line of steel, roller chain, and sprockets is shown as applied to various divisions of the oil industry. Among these applications are power transmissions for drilling, producing, pipe line, and processing. Hanson-Whitney Division is displaying its line of precision equipment including taps, hobs, gages, thread comparators, and related items. In addition to these products Hanson-Whitney Division manufactures thread milling and rapid centering machines.

Wichita Falls Foundry & Machine Co.
Wichita Falls, Tex.
26N North Area
In attendance
CHARLES WARMAN, JR., A. L. OLIVER.

This company is showing its Air-Tube clutches on a shaft to demonstrate their operation. These clutches are installed on all Wilson rigs displayed by other exhibitors.

Wichtex Machinery Company, Inc.
Wichita Falls, Tex.
Block 119

In attendance
W. J. EDWARDS, C. D. JONES, JAMES BRANHAM.

Wichtex is featuring its E-75 well servicing unit for operations to 8,000 ft. The unit is equipped with double, ladder-type telescoping mast. Head sheaves are mounted on Hyatt roller bearings. Brakes are self-equalizing cam-operated, fully-wrapped automotive type, tubing drum and sand-reel flanges have removable self-cooling brake rings. All shafts are mounted on ball or roller bearings and all controls are mounted at front of machine so that operator stands at the well.

Wichtex well servicing unit.

Wico Electric Co.
West Springfield, Mass.
46 Texas Building
In attendance
M. F. ALLEN, TOM FOTHERGILL, H. FOLLEY, E. O. JOHNSON

The current Wico Electric Co. line of heavy-duty ignition units consisting of horizontal and vertical mounted magnetos for oilfield engines is being shown.

Willard Storage Battery Co.
Cleveland, Ohio
72 Scientific and Technical Building

Williams Brothers Co.
Tulsa, Okla.
195 Oklahoma Building

J. H. Williams & Co.
Buffalo, N. Y.
27-28 Park Lane
In attendance
JACK C. MALUGEN, JOHN B. PERKINS, WALTER SILLIMAN, FRED ROBERTS, DALE BETHKE.

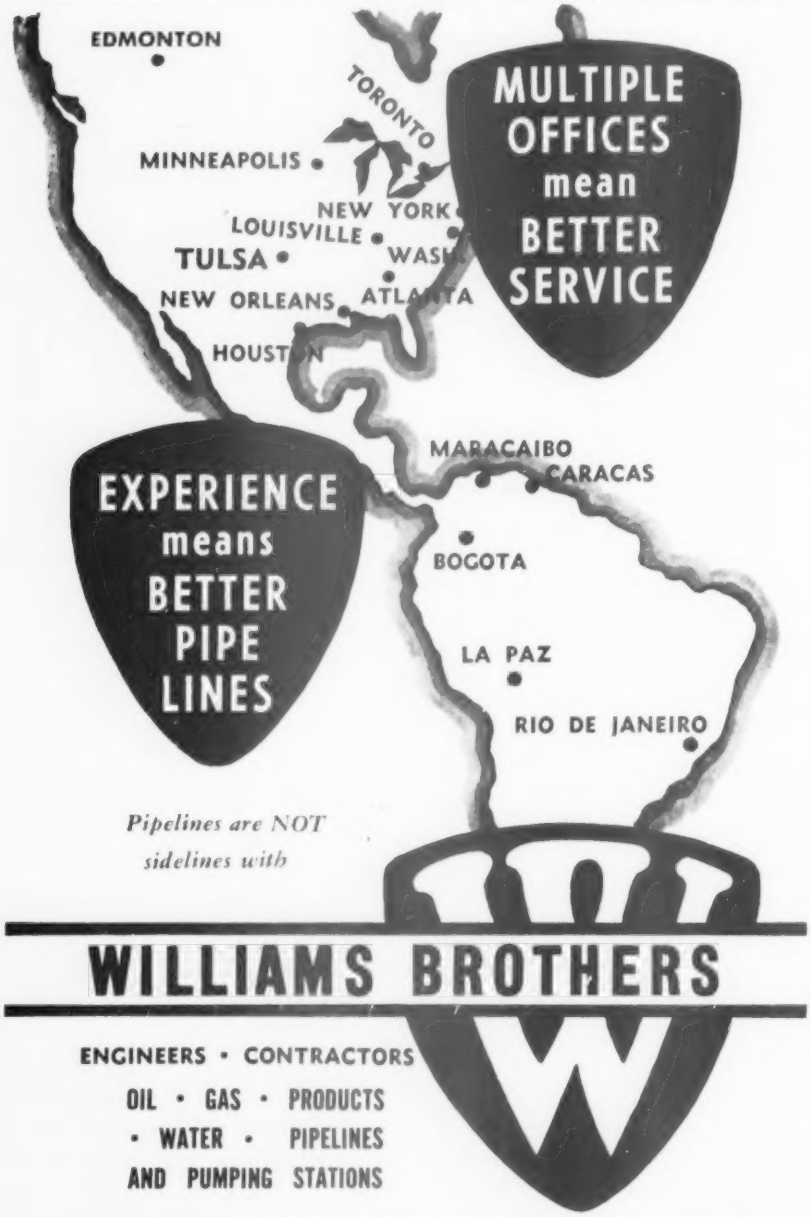
This company is showing its line of hand tools including a full range of several styles of chain pipe tongs. Also displayed is Williams Co.'s new "Vulcan" reversible tongs in action showing its "making up" and "breaking out" reversible features and its adaptability to handling fittings. A special exhibit shows the manufacturing "evolution" of an adjustable wrench.

Some of J. H. Williams & Co. hand tools.

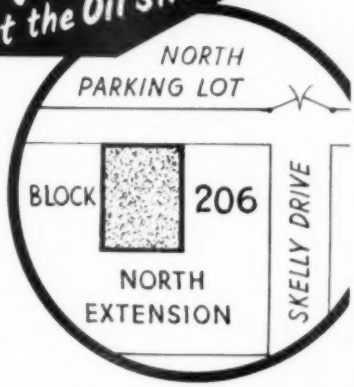
R. C. Williams & Co.
Wayne, Ohio
126 Kansas Building

Exhibit features a demonstration of a new device for diverting sand particles away from cylinder walls and plungers of production pumps. An actual pump is used to show how sand particles are kept from entering the plunger body. In addition the company is showing its lower-valve puller which is equipped with protected tap.

T. D. Williamson, Inc.
Tulsa, Okla.
28-29 Oklahoma Building
In attendance
T. D. WILLIAMSON, T. D. WILLIAM-



SEE 'em in ACTION! at the Oil Show



THOMPSON UNITIZED VACUUM TANKS

demonstrate fast loading and unloading of liquids and semi-solids! See truck and semi-trailer mounted units in actual operation. Thompson Unitized Vacuum Tanks do a score of refinery and oil field jobs quicker, cleaner and at lower cost.

Capacities 20 to 100 bbls. Can be mounted on truck, trailer, semi-, or skids. Standard attachments meet most requirements.

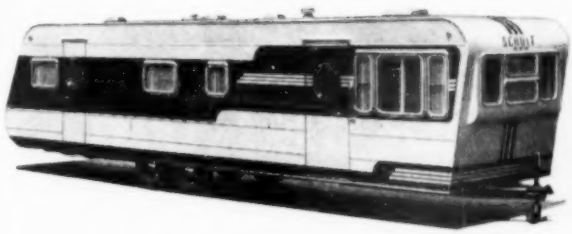
SOLE LICENSEE TO MANUFACTURE VACUUM TANKS UNDER U. S. PAT. NO. 2522077

THOMPSON
Tank & Manufacturing Co., Inc.
2019 East Wardlow Road, Long Beach 7, California

SEE SCHULT

Mobile Homes at the . . .

OIL SHOW
SPACE 208



Schult offers Big Value in "Field" Livability!

SEE FOR YOURSELF the beauty . . . the amazing spaciousness and convenience . . . the storage space and equipment . . . of these latest *furnished* mobile homes by Schult, the "Old Reliable" of the business.

Choice of four lengths . . . nine floor plans . . . many optional refinements. All models superbly engineered for road-sure towability and all-season comfort in ANY climate—arctic to tropics! Thousands who *know trailer values best* choose Schult for outstanding value.

SPACE 208

—And write for latest catalog, illustrated with pictures and floor plans of latest Dwellown models. Address Dept. 6505.

LEFT ABOVE—Built-in dinettes, upholstered in latest durable materials, with substantial pedestal tables. One of many optional Schult refinements.

RIGHT ABOVE—Knotty pine kitchen with Colonial style wrought iron hardware. (Optional.) All Schult kitchens are equipped with double sink, electric refrigerator, gas oven range, and generous cabinet space. Built-in television, if desired. Your Schult can be financed.

SCHULT **SCHULT Trailers**
SCHULT CORPORATION — ELKHART, INDIANA

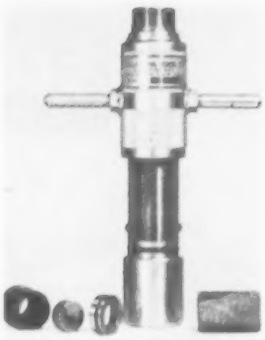
I.P.E. EXHIBIT DIRECTORY

SON, JR., O. E. THOMPSON, EARL O. OWENS, DONALD L. LONG, FLOYD E. ZONGKER.

This firm is exhibiting new developments in its pipe-line pigs, WmSON-Hillco tapping machines and pipe-line specialties. Shown in addition are standard items including WmSEAL casing bushings and concentric-support insulators.

Actual demonstrations are given daily at the exhibitor's shops and in its research laboratory.

Willis Oil Tool Co.
Long Beach, Calif.
83N North Area
In attendance
R. S. WILLIS, R. W. WILLIS, R. W. ELLIOTT, DON GLOVER, J. L. PATERSON.



Willis Oil Tool Co.'s EZXS choke.

Willis is featuring its corrosion detector and EZXS choke. The corrosion detector is designed for the injection and withdrawal of metal samples in high-pressure pipe lines and closed vessels. A removable piston carries the sample in or out of the high-pressure line or vessel. Two models, one having a swing check valve and the other a ball check valve, are shown. The corrosion detector is designed for screwing into a standard, half coupling or tee connection.

Willis' EZXS choke is a combination of a straight-line choke and a soluble plug injector. The straight-line fitting is equipped with a locking sleeve that closes the access opening. The sleeve is made with a "J" slot lock and high pressures are retained by O-rings.

Willis is also showing various of its other equipment. Included are its rotary, adjustable, flow bean, Solo choke, fluid control valve, Rod Rotor and Tubing Rotor.

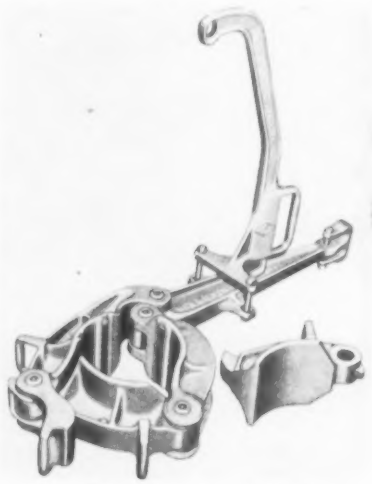
Willys-Overland Motors, Inc.
Toledo, Ohio
Block 205 N. Area

Thomas C. Wilson, Inc.
Long Island City, N. Y.
31 Silver Lane

Exhibit features mechanical tube-cleaning equipment for boilers, stills, condensers, and similar items. Other equipment on display includes tube expanders and a variety of maintenance tools for heat-exchanger and condenser tubes.

Web Wilson Oil Tools, Inc.
Los Angeles, Calif.
87-88, 123-124 Oklahoma Building
In attendance
W. A. WILSON, B. M. LANDIS, MEL PALMER, RAY E. GORMAN, R. J. EICHE, TOM MARTIN, HERB E. MALAND, GEORGE S. BADGER, M. W. PHELPS, JIMMIE DEFEE, JOE WELLS, G. H. MOORE, F. L. RATHERT, WILLIAM J. DAVIS, JOHN R. DEAVER, NOEL SWICK, C. B. HOLDER, FRED DEWELL, ED W. PLAUGHER, JESS EUBANKS.

Among the various oil-field tools shown by Web Wilson is its new drill-pipe slips for heavy-duty service. These slips are equipped with "buttons" which are so mounted as to move slightly and to take a positive grip on drill pipe without imposing unequal strains on either the buttons or the backing slips. Also on exhibit is Web Wilson's new "Hydra Hook." In addition to a moving display featuring the 125-ton Hydra Hook, other models



Web Wilson Deep Face casing tong.

QUACHROM GLUCOSATE*

The toughest corrosion problems in cooling water systems are readily controlled with Haering's Quachrom Glucosate*. Quachrom Glucosate* is constantly used in the Petroleum Industry to prevent unnecessary shutdowns due to waterside corrosion. Longer equipment life and lower maintenance costs result from Quachrom Glucosate* control. No other corrosion inhibitor can rival the long outstanding record of Quachrom Glucosate*.

Write on your company letterhead for information on Quachrom and other Organic Glucosates. Request special literature on your particular water problem.

* REG U.S. PAT OFF

D. W. HAERING & CO., INC.
WATER ANALYSTS . CONSULTANTS . MANUFACTURERS
GENERAL OFFICES
Harlandale Station,
SAN ANTONIO, TEXAS

WE READ WATER
H-O-H
ESTABLISHED 1931

are in operation on derricks shown by other exhibitors. Another tool displayed by Web Wilson is a power tubing spider with removable slip inserts (patterned after Web Wilson's "Tiger Tooth" tong dies). The heavy-duty rotary tongs are also equipped with Tiger Tooth tong dies.

Also, Web Wilson is showing its sucker-rod elevators and its forged elevator link. Still another display features the company's Tiger Tooth tong dies.

Wilson Manufacturing Co., Inc.

Wichita Falls, Tex.

Blocks N-1, R and 202

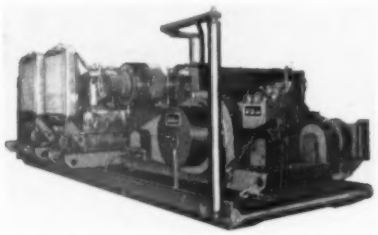
In attendance

JOHN H. WILSON, JACK WILSON, AUBREY A. WILSON, D. E. MILES, LEE BOYETT, ROMAN BARTOSH, L. D. GREGORY, W. F. YORK, PAUL CARPENTER, J. R. GETTEMY, H. V. FRAZEE, J. V. WINTLE, JACK LIGON, V. M. LIGON, L. A. GOSDEN, PAUL T. GOINS, ELBERT DITTO, KNOX EGAN, C. W. HOOPER, W. G. BAUMAN.

At Block R location, Wilson is featuring one of its new rigs equipped for modern drilling. Also shown at this same location are two other large rigs and several smaller rigs and winches.

Wilson's exhibit, at Block 202 in the North Area, features a dual-trailer-mounted, single-engine rig, built to meet extreme requirements for portability.

The main Wilson exhibit features a Titan rig along with other rigs which include an Atlas, a Giant, a Giant Single Engine, a Mogul Torcair, Mogul Roadair, and a Super. In addition a complete line of Wilson winches and other accessory items are also displayed.



View of one of Wilson's new rigs.

Wilson Supply Co.

Houston, Tex.

116-117 Oklahoma Building

In attendance

W. D. WILSON, L. R. BANDY, GEO. W. GIST, S. G. WYATT, M. A. DAVIS, WAYNE H. HARRIS, W. G. AKINS, W. M. POLLOCK, R. M. MOORE, W. J. SUTTON, NEAL T. BREAUX, RALPH CRENSHAW, C. N. BAILLIO, J. F. TUCKER, W. H. KING, T. L. LOVETT, CLIVE RUNNELS, JESS W. HINES, CHARLES A. CAPPS, T. P. DONOVAN

This oil-industry service company is maintaining its exhibit for convenience of its visitors' comfort.

Winslow Engineering Co.

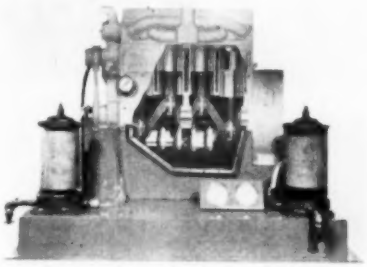
Oakland, Calif.

109-110 Oklahoma Building

In attendance

W. G. NOSTRAND, W. RAY KERN, JOHN BACHER, WAYNE HORNER, ROBERT PELUSI.

This exhibit is centered around a display which is designed to emphasize its lube-oil filters. Two filtering units in transparent housings are connected by transparent piping to an internal-combustion engine model. Photographs show various installations of bypass and full-flow Winslow filters. In addition, the company's line of various sizes of filters and elements is displayed.



Demonstration engine equipped with Winslow filters.

I.P.E. EXHIBIT DIRECTORY

Winter-Weiss Co.

Denver, Colo.

Block 201

In attendance

H. A. WINTER, JR., O. D. COLQUITT, O. C. GOSSETT, ROBERT H. REYNOLDS, A. E. SMITH, J. K. MacFARLANE, B. V. FRENCH.

Display includes complete Portadrill line of seismic and exploration rigs, plus the new "Air Blast" Portadrill, a single-unit mobile rotary rig utilizing compressed air for cutting removal. Another Portadrill for either compressed air or mud drilling along with a Portadrill for shallow oil wells and water wells, and a Portadrill reverse circulation for

YOU'VE GOT TO
"FEEL THE WATER"
TO DESIGN ALEXANDER BOATS

Our designers know and understand the actual conditions and problems that work boats must meet. That's why ALEXANDER-designed tugs, barges, dredges, etc. are outstanding wherever they are used.

ALEXANDER'S high standards of design and construction are setting the pace for greater efficiency in inland waterways operations.

Whether you require new equipment or service on old equipment, be sure to use ALEXANDER'S complete facilities.

ALEXANDER Shipyard INC.

P. O. Box 8126, New Orleans, La. Phone VAlley 2408

BUILDERS OF FINE MARINE EQUIPMENT

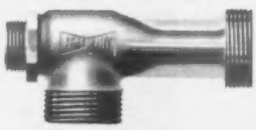
PENBERTHY *Jet Pumps*

(EJECTORS • EDUCTORS • EXHAUSTERS • SYPHONS)

Often the MOST ECONOMICAL and EFFICIENT WAY to Transfer and Mix Fluids

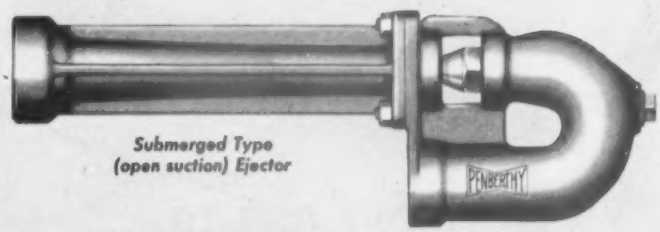
The jet pump is a simple device which uses steam, water or air under pressure to pump (or mix) fluids that can include solids in suspension. Jet pumps have no moving parts, need no lubrication, have no packing glands, are practically noiseless. They are low in initial cost and installation cost . . . compact in size and trouble-free. Penberthy offers a variety of jet pumps for a wide range of ordinary and unusual applications. They can be made from materials that withstand corrosion, contamination and high temperatures. Ask for new Bulletin 512.

Standard Ejector for Steam or Air Operation



Standard Hydraulic Ejector

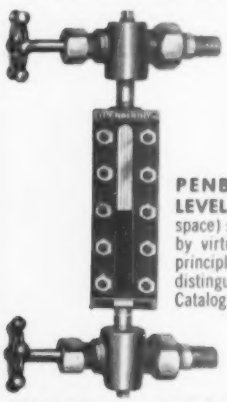
Stainless Steel Jet Pump for Handling Corrosive Chemicals



Submerged Type (open suction) Ejector

WRITE FOR *New* BULLETIN No. 512

OTHER PENBERTHY PRODUCTS



PENBERTHY TRANSPARENT LIQUID LEVEL GAGE—Used to observe color and density of liquids under high pressures and/or temperatures. Exceptionally sturdy construction—liquid chamber machined from solid block of metal. Ask for Catalog 35.

PENBERTHY REFLEX LIQUID LEVEL GAGE—Empty space (or steam space) shows white and liquid shows black by virtue of a simple, unvariable optical principle. Accurate reading as far as you can distinguish black and white. Write for Catalog 35.

PENBERTHY AUTOMATIC INJECTOR—Will supply feed water to boiler at minimum cost. Quickly, easily installed, reliable under most severe operating conditions. Ask for Bulletin 513.

4731

PENBERTHY INJECTORS

PENBERTHY INJECTOR COMPANY

DIVISION OF THE BUFFALO-ECLIPSE CORPORATION

Detroit 2, Michigan

•

Established 1886

•

Canadian Plant—Windsor, Ontario

AirBlast Portadrill utilizing compressed air for the removal of cuttings.

holes up to 60 in. in diameter are also displayed.

Wisconsin Motor Corp.
Milwaukee, Wis.
Block 4

In attendance

H. A. TODD, PHIL NORTON, RAY FELLOWS, IRVING LE BEAU, T. W. PERSCHBACHER, TOM BARRETT, JOHN JULIAN, FRED MUELLER, GEORGE DUNCAN, Wisconsin Motor Corp.; ROY O. NEAL, BOB R. NEAL, GEORGE E. KLUPPEL, RUSSELL PRIDE, JOE OWEN, DICK JOHNSON, Harley Sales Co.

Wisconsin Motor Corp. and Harley Sales Co. are displaying a complete line of heavy-duty air-cooled engines and Wisconsin-powered oil-field equipment. The exhibit includes all models of Wisconsin Motor Corp.'s heavy-duty air-cooled engines (3 to 36 hp.) currently manufactured, together with powered centrifugal, rotary and reciprocating pumping units, electric-lighting plants, and compressor units.

Included in the exhibit is the largest and newest engine in the Wisconsin line, a V-type four-cylinder unit, just recently announced. Rating on this engine is 25 hp. at 1,400 r.p.m. with a top of 36 hp. at 2,200 r.p.m.

W-K-M Co.
Houston, Tex.
18-21 Texas Building and adjacent area

This exhibit of W-K-M products includes cutaway models of its production, pipe line, and process valve.

Woodward Governor Co.
Rockford, Ill.
208 Oklahoma Building

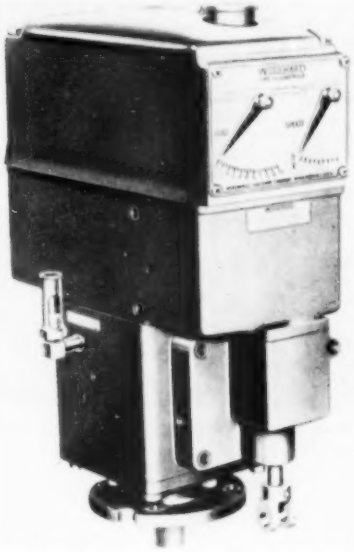
In attendance

H. WALTER THORELL, W. J. WHITEHEAD, F. J. ZIRCHER, D. E. CARNCROSS, P. S. KJELLGREN.

Woodward Governor Co. is showing two of its engine governors for petroleum-industry service. Both of these units are adaptable to applications where the governor is called on to perform other functions than simply to control speed.

One of the units is a cutaway section of a Woodward governor equipped with pneumatic-hydraulic, speed-adjusting mechanism. This governor is used in combination with conventional air instruments to control pressures at pipe line pumping stations or in processing operations.

The other unit is a Woodward, isobaric-pressure regulator installed on a Type PG governor. This regulator can be used on other types of governors, taking its pressure signal directly from the line without using an air-actuated instrument.



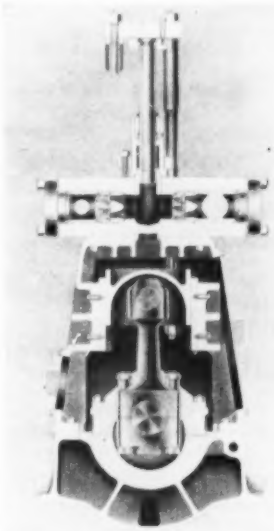
Woodward Type P6 governor equipped with pneumatic-hydraulic speed control.

World Petroleum
New York, N. Y.
19 Kansas Building

Worthington Corp.
Harrison, N. J.
Block L

Worthington Corp. is exhibiting for the first time a seven-plunger power pump which is part of the expansion of its line of vertical, heavy-duty multiplunger pumps.

The power pump line, mainly used in water-flooding and pipe-line work, features interchangeable plunger sizes, break-through-flow, individual valve covers, and complete automatic oiling system.



Sectional view of Worthington's, vertical, multiplunger, power pump.

In addition to the new seven-plunger unit, Worthington is also showing its centrifugal, rotary, and vertical turbine pumps, along with refrigeration and flare-gas compressors, plus various construction equipment.

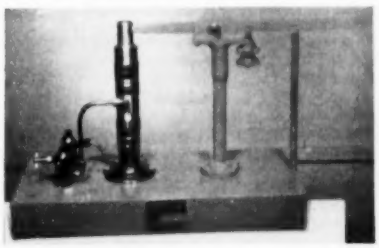
Among other Worthington products exhibited are water-flooding equipment including pressure filter, power and backwash pumps, deep-well turbine pump, multi-V-drive, and steam pump.

Wright Chemical Corp.
Chicago, Ill.
166 Oklahoma Building

In attendance

FRANK W. MRAZEK, CHARLES W. McCUMBER, CHARLES E. ERB, JOHN D. STONE, D. R. WALSER, L. LON SCOTT, EDWARD C. REES, CHARLES F. SALAMANO.

Wright Chemical Corp. is exhibiting what it calls "horrible examples" of improper water conditioning. To support this idea, samples of scale and corroded equipment in a simulated cooling tower are displayed. Also actual living organisms will be shown, projected through the eyepiece of a microscope. Samples of slime and algae, which are taken from actual petroleum water-cooling systems that have not been properly conditioned, may be viewed through an oversized microscope. Various chemical-feed pumps are also displayed. Included are Nelson proportioning units, a walking-beam injection pump for introducing corrosion and scale-prevention chemicals into producing wells, and a similar pump of another type.



Nelson Chemical Corp.'s walking beam chemical-injection pump.

Wright Hoist Division
American Chain & Cable Co., Inc.
York, Pa.
158 Oklahoma Building

In attendance

S. J. WOODWORTH, D. R. SMITH, C. F. CARLTON

Wright Hoist Division is showing new products in its line, Speedway electric hoists and Safeway hand, chain hoists for oil-industry application.

Wright Petroleum Laboratories
Tulsa, Okla.
23 Scientific & Technical Building

In attendance

FRANK PURDUM, JOE R. WRIGHT, C. C. WILSON, DON CLAPSADDLE, BOB BELLAMY, LOUIS PICARD, R. M. ANDERSON, KENNETH BABCOCK, G. W. TAYLOR, FRANK LEINWEBER, HAROLD HENSLEY, REX SHEARER, RAY CRAIG.

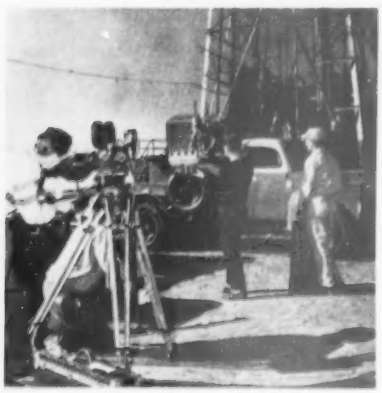
This display is designed to show the data obtained and form in which these data are presented in reports. Typical reports on the following tests are exhibited: Routine core

analysis and special core analysis for obtaining data for secondary-recovery operations. Natural gas and liquefied petroleum gas analysis plus water analysis.

Recombined surface samples analysis on distillate wells and bottom-hole sample of reservoir oil analysis.

Norman Wright Productions, Inc.
Hollywood, Calif.
73N North Area
In attendance
NORMAN WRIGHT, WILLIAM STEWART, ERROL GREY.

Norman Wright Productions, a motion-picture-production organization serving industry, is running two films showing Halliburton's Hydrafrac and Welex's Jet Perforation operations.



Norman Wright crew filming Hydrafrac operation.

Yale Machine Works
Houston, Tex.
95N North Area
In attendance
CHARLES F. LANG, R. A. LILLICH.

Yale is displaying its complete line of unions, all of which feature resilient O-ring sealing members. For the pipe-line industry, chief interest centers in a two-piece blank cap union, manufactured in sizes up to 36-in. for use on scraper traps, strainers, manifolds, and similar applications. Also exhibited is an insulated union, used on lines and systems in combating electrolytic corrosion. In addition to these two products, the Yale wing union and misaligning union are also shown.

Yale two-piece blank cap unions on a natural-gas pipe line system.

Youngstown Sheet & Tube Co.
Youngstown, Ohio
Block 7
In attendance
GEORGE McCUSKEY, L. E. WALLACE, R. A. CURL, J. P. De HETRE, EARL FETTERS, C. T. McCLURE, J. C. SIEGEL.
(See Continental Supply Co.)

Young Engine Corp.
Canton, Ohio
Block A
In attendance
W. T. YOUNG, A. E. AVERS, P. A. FOSTER.

Young Engine Corp. is showing one of its power units along with various other equipment. The engine displayed is a gas-gasoline unit for cable-tool service and is equipped with reversible transmission, heavy-duty, cone-type clutches, neutral brake, and spiral gears.

Also displayed is Young's under-road boring machine along with its 3-kw., d.c. electric-generating unit. The boring machine has a capacity with two hydraulic-feed cylinders. Power for the d.c. generator is supplied by a water-cooled four-cylinder gas-gasoline engine.

Young Engine Corp.'s gas-drilling unit powered with a Le Roi six-cylinder engine.

Young Radiator Co.
Racine, Wis.
67-68 Scientific & Technical Building

Young Radiator Co. is showing its heat-transfer products for the petroleum industry. Included is heat-transfer equipment specially designed for use in refineries and for oil and gas-field processing.

Among the other items displayed is a wide variety of radiators for gas, gasoline, and diesel-engine cooling, tubular, lube-oil coolers, air heaters and coolers for cold water systems. This group features the company's Mono-Weld and Vertiflow lines.

Zeligson Truck & Equipment Co.
Tulsa, Okla.
Block 205
In attendance
ROBERT L. ZELIGSON, S. W. LIEBERMAN, SAMUEL L. ZELIGSON.

This exhibit consists of heavy tandem 6 by 6, all-wheel-drive trucks.

John Zink Co.
Tulsa, Okla.
Block 5
In attendance
JOHN ZINK, ROBERT REED, S. G. HIGGINBOTHAM, J. ARTHUR MOORE, M. B. FISHER.

Besides its standard burners for refinery and industrial use, John Zink Co. is showing its new smokeless, field-flare burner and its new direct-fired air heater.

Reading Business Magazines for Profit

(Continued from page 255)

What is important here is that collective use of this fine resource should be **organized.** It shouldn't be dependent on somebody's, or anybody's, impulse or inspiration. Every single issue of a soundly edited business paper is loaded with pay dirt. It needs to be mined and processed and marketed systematically, and efficiently.

5 PROFIT BY READING. This has to do with advertising. There are two reasons why management men, in their own good interest, should take a hard **new** look at the purpose and reward of advertising content in their business press. The first grows out of today's critical need for better ways of doing things . . . in design, construction, operation, and maintenance. The advertising pages are a full-dress parade of the latest and best in new products, new applications, new ideas, as offered by the leading suppliers. The ads work hand in hand with the editorial pages.

The second point deserving consideration is the intensified role that advertising **must** pay in marketing our increased capacity to make things. Too little attention is given topside to the need for **greater productivity in distribution,** an assertion we're hearing so much these days.

6 EXPECT MORE. Last of the half-dozen proposals for sweating more good out of business papers may seem hard to get your teeth into but is fully realistic just the same. It is: **expect more** from your business paper. Keep the heat on the publishers and editorial people to give you better and better service. It is right that they should, in our common effort to lick the awful headaches and reach for the rich rewards we're talking and thinking so much about.

Business papers must be edited for easier and quicker reading, which is quite apropos of an earlier point about the need for more reading ability. Techniques of editorial presentations are improving. Business papers are doing a more skillful job of screening material, of briefing it, of projecting it in chart and picture, of styling text to fit the special audience—all aimed at giving **busy** people meaty stuff, **fast**—and sharply focused.

BOOK

CROSS-SECTIONS OF THE TEXAS GULF COAST. By Richard L. Porter and Calvin A. Chimene. Published by Five Star Oil Report, P. O. Box 331, Houston, 48 pp. and two pocketed cross-sections. $7.50.

This detailed study of the subsurface Tertiary stratigraphy of the Central Texas Gulf Coast is the first to be published for several years. The two cross-sections (54 in. long) present a wealth of paleontological data in graphic form. In addition to these cross-sections, which run from northwest Bastrop and Lee counties to the Gulf of Mexico, this new publication includes a precise description of each formation and member, a new revised check list of microscopic fauna for each subsurface formation, and a stratigraphic chart of the Texas Gulf Coast.

Pipe-Line Construction

PIPE-LINE activity as reported below by The Oil and Gas Journal is compiled from information received from pipe-line companies and contracting firms.

These projects include those planned, proposed, under way, and contracted. Uncontracted projects are indicated by a • preceding the company name.

Crude-Oil Pipe Lines

• **California - Oregon Pipe Line System**—103 miles, 6-in., proposed, Crescent City, Calif., to Medford, Oregon.

• **R. A. Goodall.**—45 miles, 6-in., planned, Little Beaver to Merino, Colo. (To connect with Sterling system).

• **Gulf Oil Co.**—22 miles, 8-in., planned, Portilla field, Texas, to Corpus Christi.

• **Gulf Refining Co.**—55 miles, 10-in., planned, Bay Marchand to Plaquemines, La.

• **Humble Pipe Line Co.**—71 miles, 16-18-in., planned, East Texas to Louisiana-Texas border. (30 miles of 16-in., and 41 miles of 18-in.) Completion date 10-53.

Under way, Hawkins field, Woods County, Texas, to Longview.

Start 7-1, Longview to Louisiana border.

• **Interstate Oil Pipe Line Co.**—137.6 miles, 22-in., planned, Shreveport to Baton Rouge, La.

Interstate Oil Pipe Line Co.—68 miles, 16-in., under way, Raceland to Anchorage, La.

Under way, Raceland to Plaquemine, La. L. E. Farley, Inc. 6-15-53.

Plaquemine to Anchorage, La.

22 miles, 18-in., contracted, Louisiana-Texas state line to near Shreveport, La. River Const. Corp. 6-53.

28 miles, 22-in., contracted, Shreveport, La., to Coushatta, La. River Const. Corp. 6-53.

Lakehead Pipe Line Co.—635 miles, 30-in., under way, Superior, Wis., to Sarnia, Ontario, Canada.

Contracted, Superior to Wisconsin-Michigan state line. Mahoney Contr.

Mackinac City along Straits of Mackinac to Red Oak, Mich. Bechtel Corp.

Red Oak via Bay City to International Boundary south of Port Huron on St. Clair River. Conyes Const.

Water crossings of Mackinac, Saginaw, and St. Clair rivers. Merritt-Chapman & Scott Corp., W. J. Meagher & Sons, Inc., and Midwestern Constructors.

Under way, Michigan-Wisconsin State line through Crystal Falls to Cooks, Mich. Anderson Bros. 10-53.

Under way, Cooks to St. Ignace, Mich., on Straits of Mackinac. Midwestern Constructors, Inc.

• **Magnolia Pipe Line Co.**—29 miles, 8-in., planned, Midland County, Texas area.

47 miles, 4-6-8-in., planned, Nolley field, Andrews County to Magutex field, West Texas.

• **Pasotex Pipe Line Co.**—146 miles, 10-in., planned, Snyder to Wink, Tex.

Phillips Pipe Line Co.—45 miles, 12-in., under way. Rancho system to Sweeny, Tex. Morrison Constructors. 6-53.

26 miles, 8-in., under way, northeast area of Andrews County, Texas.

18 miles, under way, gathering lines, northeast area of Andrews County, Texas.

Platte Pipe Line Co.—93 miles, 12-14-in., under way. Chatham station near Worland, Wyo., to Oregon basin, and Byron field. R. H. Fulton Co. Completion date 6-53.

Under way Chatham, Wyo., to Oregon basin. R. H. Fulton Co.

Under way Oregon basin to Byron-Garland field. R. H. Fulton Co.

• **Progress Pacific Pipeline Co.**—1,100 miles, 24-in., planned, Odessa, Tex., to Los Angeles Harbor, Calif.

• **Roosevelt Oil & Refining Corp.**—22 miles, 4 and 6-in., planned St. Helens to Norwich, Mich.

• **Service Pipe Line Co.**—185 miles, 16-in., planned, Bowie, Tex., to Drumright, Okla.

29 miles, 4-6-8-in., proposed, Natrona County, Wyoming.

170 miles, 12-16-in., proposed, Tioga-Beaver Lodge to Williston, N. D.

16-in., Tioga-Beaver Lodge area to Mandan, N. D.

12-in., Mandan to Williston, N. D.

41 miles, 4-6-8-in., planned, Williams and Mountrail counties, North Dakota.

• **Texas-New Mexico Pipe Line Co.**—48 miles, 8-in., planned, from Lovington, N. M.

Texas Pipe Line Co.—34 miles, 6-in., under way, Sour Lake to Port Arthur, Tex. Houston Contracting.

45 miles, 8-10-in., under way, between Erath and Bayou Sale stations. Houston Contracting Co.

• **West Coast Pipeline Co.**—960 miles, 20-22-in., planned, Wink, Tex., to Norwalk, Calif.

Products Pipe Lines

H. W. Bass & Sons., Inc.—152 miles, 4-6-in., proposed, Duval and Live Oak counties, Texas, to Corpus Christi, Tex.

Buckeye Pipe Line Co.—370 miles, 10-14-16-in., under way, Linden, N. J., via Allentown, Pa., to Auburn, Syracuse, Waterloo, and Rochester, N. Y. 9-53.

Guthsville to Dupont, Pa. Pipe Line Const. & Drilling Co.

Dupont north to Pennsylvania-New York state line. Fulghum Contr. Corp.

Pennsylvania-New York state line to Auburn, N. Y. Williams-Austin.

Auburn to Syracuse, N. Y. Williams-Austin.

Auburn to Caledonia, N. Y. Universal Map and Survey Co.

• **Continental Pipe Line Co.**—(Yellowstone Line)—600 miles, 8-in., planned, Billings, Mont., to Spokane, Wash.

Harbor Products Systems—36 miles, 16-in., under way. Woodbury Junction, Philadelphia to Trembley Point, N. J. (Joint ownership of Sinclair Pipe Line Co., Gulf Oil Corp., and Texas Co.)

Indiana Farm Bureau Cooperative Association, Inc.—180 miles, 8-in., under way, Mt. Vernon to Indianapolis, Ind. R. B. Potashnick, contractor.

70 miles, 4-in., under way, Indianapolis to Peru, Ind. R. B. Potashnick, contractor.

Inland Empire Pipe Line Co.—504 miles, 10-in., proposed, Billings, Mont., to Spokane, Wash.

• **Kanch Pipe Line Co.**—236 miles, 8-in., planned, Wichita and Potwin, Kans., to Fairmont, Neb. 9-53.

• **Phillips Petroleum Co.**—54 miles, 6-in., planned, Goldsmith to Borger, Tex.

52 miles, 10-in., planned, Shell's Brookshire system to Sweeny, Tex. 5-53.

Phillips Pipe Line Co.—33 miles, 12-in., Texas and Oklahoma loops. R. H. Fulton & Co. 6-53.

30 miles, 12-in., Kansas loops. 6-53.

• **Plantation Pipe Line Co.**—82 miles, 14-in., planned, Charlotte to Greensboro, N. C.

Salt Lake Pipe Line Co.—140 miles, 8-in.,

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start 6-1, Pasoe to Spokane, Wash. Completion date 10-1-53.

• **Standard Oil Co. (Ind.)**—Planned, Mandan, N. D., to Moorhead, Minn.

Standard Oil Co. (Ind.)—243 miles, 10-12-in., under way, Whiting, Ind., to River Rouge, Mich. Somerville Const. Co. 100 miles.

Sun Pipe Line Co.—50 miles, 8-in., under way, Toledo, Ohio to Inkster Junction west of Detroit. 10-53. R. L. Coolsaet Const. Co. and Poston Pipe Line Co.

Texas Pipe Line Co. (Evangeline Products Systems)—196 miles, 16-in., under way, Port Arthur, Tex., to Baton Rouge, La. Panama-Williams Co. Completion date 7-53.

Texas Pipe Line Co.—29 miles, under way, Fuller Ranch gasoline plant to Basin Pipe Line System, West Texas. Holder Const. Co.

• **United States Pipe Line Co.**—1,799 miles, 22-26-in., proposed, Beaumont, Tex., to Newark, N. J.

Beaumont, Tex., to Memphis, Tenn.
Memphis, Tenn., to Louisville, Ky.
Louisville, Ky., to Newark, N. J.
Laterals to Paducah and Lexington, Ky.

• **Williston Basin Pipe Line Co.**—244 miles, 8-in., proposed, Laurel-Billings, Mont., refineries to Glendive, Mont.

• **Wolverine Pipe Line System**—200 miles, 14-in., planned, Chicago to Toledo and Detroit. (Joint ownership of Shell, Texas, and Cities Service). Completion date 1-54.

Natural-Gas Pipe Lines

• **Allied Gas Co.**—24 miles, 6⅝-in., proposed, McLean to Champaign County, Illinois.

• **Arkansas-Missouri Power Co.**—140 miles, 2 to 10-in., planned, St. Francis River, Clay County, Arkansas, to near Campbell, Mo.

• **Associated Natural Gas Co.**—88 miles, Missouri.

• **Atlantic Seaboard Corp.**—29 miles, 26-in., proposed, looping along Cobb-Rockville line.

• **Carolina Natural Gas Corp.**—185 miles, 2-12-in., proposed, lateral lines off Transcontinental in North and South Carolina.

• **Chattahoochee Natural Gas Co.**—70 miles, proposed, Floyd County, Georgia, to Dalton, Ga.

• **Chicago District Pipe Line Co.**—35 miles, 24-30-in., proposed, Chicago area.

• **Cities Service Gas Co.**—21 miles, 26-in., planned, Franklin and Anderson counties, Kansas.

15 miles, 20-in., Craig County, Oklahoma, to Lawrence County, Missouri.

69 miles, 20-16-in., proposed, Cleveland, McClain, and Garvin counties, Oklahoma.

• **Coast Counties Gas & Electric Co.**—40 miles, 3, 4, and 8-in., planned. Coast and Valley region, California.

Colorado Interstate Gas Co.—250 miles, 20-in., under way, Kit Carson, Colo., to Amarillo, Tex. R. H. Fulton & Co., contractor. Pueblo County to Fowler, Colo.

• **Colorado Interstate Gas Co.**—365 miles, 22-in., proposed, Green River, Wyo., to Denver, Colo.

116 miles, proposed, Colorado, Oklahoma, Texas, and Kansas.

• **Cumberland and Allegheny Gas Co.**—31 miles, 12-in., proposed, Garrett County, Md., to Keyser, W. Va.

• **East Tennessee Natural Gas Co.**—158 miles, 16-in., planned, Knoxville to Kingsport, Tenn. (58 miles of laterals.) 11-53.

• **El Paso Natural Gas Co.**—1,778 miles, proposed, Permian basin, New Mexico, Texas, and Colorado.

• **Fort Worth Basin Gas Co.**—Planned, Novice, through Brown and Comanche counties, Texas.

• **Glacier Gas Co.**—285 miles, 20-in., proposed, Kalispell, Mont., to Spokane, Wash.

120 miles, 16-in., proposed, Spokane to Hanford, Wash.

91 miles, 8⅝-in., proposed, Spokane to Lewiston, Idaho.

130 miles, 12¾-in., proposed, Spokane to International boundary at Trail, British Columbia.

• **Gulf Interstate Gas Co.**—860 miles, 30-in., proposed, Acadia Parish, La., to Boyd County, Ky.

329 miles, 12 to 24-in., proposed. Laterals off Acadia Parish, Louisiana, to Boyd County, Kentucky, line.

• **Home Gas Co.**—32 miles, 12-in., planned, Breesport to Union Center, N. Y.

17 miles, 12-in., proposed, loops from Hancock to Sanford, N. M.

46 miles, 12-in., under way, Tioga and Broome counties, New York. H. L. Gentry Const.

22 miles, 12-16-in., under way, Binghampton, N. Y.

• **Hope Natural Gas Co.**—33 miles, 8-10-12-in., planned, Wyoming County, West Virginia, south to Buchanan County, Virginia.

• **Interstate Power Co.**—26 miles, 8-in., proposed, from Nat. Gas P. L. Co. America line near Hooppole, Ill., to Clinton, Ia.

Iowa-Illinois Gas & Electric Co.—41 miles, 10-in., planned, Washington County to Cedar Rapids, Iowa.

• **Kansas-Nebraska Natural Gas Co., Inc.**—179 miles, planned, Kansas and Nebraska.

54 miles, 4-6-in., planned, Neligh to Hartington, Neb. Completion date 1953.

42 miles, 4-6-in., planned, Neligh to O'Neil, Neb. 9-53.

196 miles, planned, to serve Wisner, Pilger, and Stanton, Neb.

Kansas Nebraska Natural Gas Co.—70 miles, 6-8-in., under way, Nebraska City to Denver-Julesburg basin, Colo.

• **Lone Star Gas Co.**—100 miles, proposed, storage fields to the Dallas-Fort Worth area.

35 miles, 12-in., proposed, southeastern Schleicher County.

• **Manufacturers Gas Light & Heat Co.**—40 miles, proposed, Allegheny, Washington, and Beaver counties, Pennsylvania.

213 miles, 3 to 26-in., proposed, various points on system in Pennsylvania, West Virginia, and Ohio.

• **Michigan Gas Storage Co.**—30 miles, 26-in., planned, Lainsburg Junction north. 7-53.

• **Midsouth Gas Co.**—191 miles, planned, Helena to Palestine, Ark.

• **Mississippi River Fuel Corp.**—109 miles, 10-18-in., planned, laterals in Woodlawn and Waskom gas fields, Texas.

Missouri Central Gas Co.—25 miles, 6-in., contracted, Moberly to Macon, Mo. L. R. Young Const. Co.

• **Missouri Public Service Co.**—136 miles, 8-10-in., proposed, New Franklin to Trenton, Mo.

24 miles, 10-in., Johnson County to Clinton, Mo.

• **Montana Power Co.**—52 miles, 16-in., planned, Canada - Montana border to Cut Bank, Mont.

• **Morganfield Natural Gas Co.**—31 miles, 4-6-in., planned, through Sturgis, Providence, Clay, Diamond, Wheatcroft, and Sullivan, Ky.

• **Natural Gas Producers Inc.**—100 miles, 12-in., planned, Yenter pool to Denver, Colo.

• **Nevada Natural Gas Pipe Line Co.**—114 miles, 12¾-in., proposed, Topock, Ariz., to Las Vegas, Nev.

• **New River Gas Co.**—50 miles, planned, Summers to Monroe counties, West Virginia, to Narrows and Dublin, W. Va.

• **New York State Electric and Gas Co.**—59 miles, 8-10-24-in., proposed, Oneonta and Norwich to DeRuyter, N. Y.

New York State Natural Gas Corp.—

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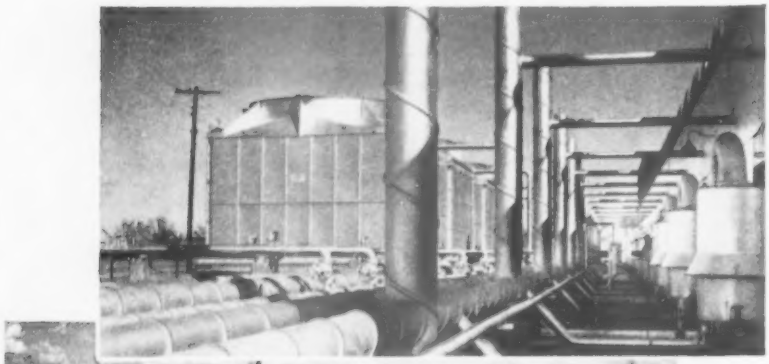

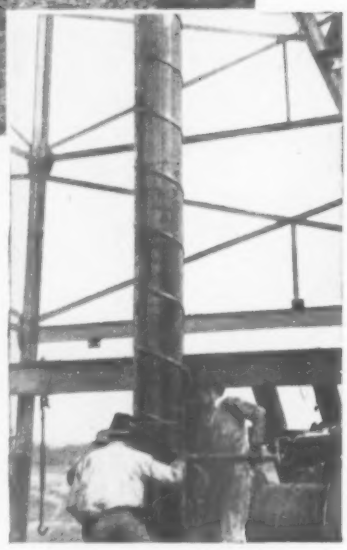

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Colesburg Junction to Sabinsville, Pa. (begin at completion of Angelica job), Williams-Austin. Howard Bauer, superintendent.

21 miles, Columbiana and Stark counties, Ohio.

• **New York State Natural Gas Co.**—75 miles, 20-in., proposed, Cameron County to Armstrong County, Pennsylvania.

58 miles, 14 and 20-in., planned, New York State line.

Sabinsville to Boom station.

Skaneateles to Onondaga, N. Y.

Ithaca to Dryden, N. Y.

Niagara Mohawk Power Corp.—55 miles, 10-in., under way. Watertown to Syracuse, New York. Williams-Austin Co.

• **Northern Indiana Fuel & Light Co.**—33 miles, 8-in., proposed, Edgerton to Auburn, Ind.

• **Northern Natural Gas Co.**—580 miles, proposed, Kansas, Texas, Oklahoma, and Nebraska loops.

210 miles, 26-in., planned, five loops in Texas-Oklahoma area, two in Kansas, and two in Nebraska.

400 miles, 24-in., proposed, Emerson, Manitoba south to Red River Valley through Fergus Falls on to St. Paul, Minn.

102 miles, planned, extension.

Northern Natural Gas Co.—140 miles, 4-6-8-in., under way, south of Rolla, Kans., to Guymon, Okla. Reese Bros. Const. Co.

• **Northwest Natural Gas Co.**—750 miles, planned, Washington, Oregon, and Idaho.

24-in., Eastport, Idaho, to Monroe, Wash.

18-in., Monroe to International boundary near Lynden, Wash.

22-in., Monroe to near Seattle, Wash.

20-in., Seattle to Portland, Ore.

• **Ohio Fuel Gas Co.**—31 miles, 20-in., planned, Licking County to Richland County, Ohio.

22 miles, 16-in., planned, Dayton, Troy, Piqua, and Sidney, Ohio.

23 miles, 16-20-in., planned, Wellington to Elyria, Ohio; 16 miles, 20-in., planned, Benton Station to Crawford Station; 18 miles, 20-in., Crawford Station to near Columbus; 16 miles, 16-in., planned, Berlin to Sandusky, Ohio.

74 miles, 3 to 20-in., planned, Hocking, Knox, and Ashland counties, Ohio.

47 miles, 20-in., planned, Benton Township, Hocking County, to Columbus, Ohio.

61 miles, planned, northern and southwestern Ohio.

33 miles, 20-in., proposed, Jefferson to Seneca, Ohio.

Oklahoma Natural Gas Co.—50 miles, 18-in., under way, Sapulpa to Chouteau, Okla. Engineering Const. Co. 6-53.

• **Pacific Gas & Electric Co.**—50 miles, 12-16-20-in., planned, Fresno to Merced, Calif.

(Section 1) 16-in., Burrel to near Easton, Calif.

(Section 2) 20-in., Holm to Topock-Milpitas line.

(Section 3) 12-in., parallel existing Madera-Livingston line, planned, Monterey to Fort Ord to Castroville; Napa Wye to Shellville; Cotati to Santa Rosa, Calif.

170 miles, 34-in., proposed, main-line loops along Topock, Ariz., to Milpitas, Calif.

Pacific Gas & Electric Co.—141 miles, 34-in., under way, parallel sections along Topock-Milpitas line. Engineers Pipe Line, Ltd. Summer 1953.

• **Pacific Northwest Pipeline Corp.**—1,466 miles, proposed, Ignacio, Colo., to Bellingham, Wash.

380 miles, proposed, laterals and spurs off

main line to Pocatello, Idaho, to Yakima, Wash.

Panhandle Eastern Pipe Line Co.—70 miles, 24-26-in., under way, looping from Sneed, Tex., to Emporia, Kans.

174 miles, 30 and 26-in., contracted. Tuscola, Ill., eastward—looping present system; R. A. Conyes, contractor.

26-in., Edgerton, Mich., Anderson Brothers

30-in., looping in Tuscola, Ill.

30-in., looping in Montezuma, Ind.

30-in., looping in Zionsville, Ind.

• **Panhandle Eastern Pipe Line Co.**—23 miles, planned, Peoria County, Illinois.

• **Peoples Natural Gas Co.**—25 miles 6 to 24-in., planned, Cambria and Blair counties, Pennsylvania.

• **Permian Basin Pipeline Co. (Northern Natural)**—163 miles, 16-30-in., proposed, Permian basin and eastern New Mexico.

• **Phillips Petroleum Co.—125 miles**, 2 to 24-in., under way, Midland, Upton, Glasscock, and Reagan counties, Texas. Vaughn & Taylor Const. Co. Completion date 6-53.

28 miles, 10-in., planned, Bayou Plant to Adams Terminal. Completion date 7-53.

• **Public Service Co. of Colorado—95** miles, proposed, Douglas Creek and other gas fields to Grand Junction, Colo., area.

• **Rockland Light & Power Co.**—22 miles, 8-in., proposed, Orangetown to Tompkins Cove, N. Y.

• **Shenandoah Gas Co.**—39 miles, 3-4-8-in., proposed, Middleton, Va., to Martinsburg, W. Va.

• **South Carolina Natural Gas Co.**—160 miles, 16-12-10-in., proposed, Aiken, S. C., to cities of Columbia, Summerville, and Charleston, S. C.

• **South Georgia Natural Gas Co.**—339 miles, 2-12-in., planned, Phoenix, Ala., to Tallahassee, Fla. (a) 12-in., Phoenix, Ala., to Albany, Ga., (b) 10-in., Albany, Ga., to Moultrie, Ga., (c) 8-in., Moultrie, Ga., to Tallahassee.

• **Southern California Gas Co.**—35 miles, planned, Antelope Valley, California.

Southern California Gas Co. and Southern Counties Gas Co. of California—45 miles, 30-in., contracted, looping on line from Arizona border to Los Angeles. J. B. Gill.

81 miles, 30-in., contracted, Whitewater to Desert Center, Calif. J. B. Gill.

Contracted, looping between Blythe and Colorado River and on westward of Indio. J. B. Gill.

• **Southern California Gas Co., and Southern Counties Gas Co.**—73 miles, 30-in., planned, loops on main line from Blythe to Los Angeles.

Southern Natural Gas Co.—1,235 miles, 24 to 4½-in., contracted, Louisiana, Mississippi, Alabama, and Georgia, and South Carolina. Houston Contracting and H. C. Price. Fall 1953.

Gwinville, Miss., to Franklinton Junction, La.

Lateral from Franklinton Junction, La., to Sand Hook field, Mississippi.

Franklinton Junction, La., to Duck Lake gas field, Louisiana.

Duck Lake gas field, Louisiana, to Lake Sand field, Louisiana.

• **Southern Union Gas Co.**—21 miles, 20-in., planned, Albuquerque, N. M.

30 miles, 12-20-in., contracted, San Juan County, New Mexico. R. H. Fulton & Co.

• **Southwest Gas Corp., Ltd.**—26 miles, proposed, from P.G.& E. line to Victorville, Calif.

• **Tennessee Gas Transmission Co.**—574 miles, 30-in., proposed, Kinder, La., northeast through Louisiana, Mississippi, to Portland, Tenn.

130 miles, proposed, looping in Texas and Louisiana. Including 67 miles of 30-in. line.

63 miles, 26-in., proposed, Ohio and Pennsylvania.

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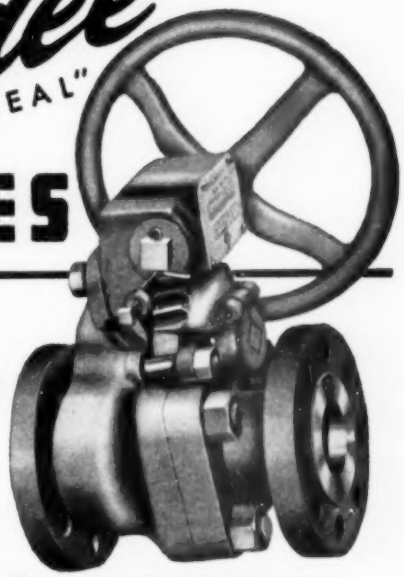

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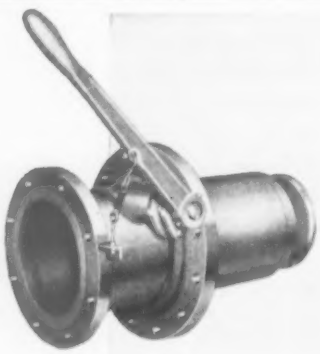

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45 miles, 20-in., proposed, Buffalo, N. Y., to the U. S.-Canadian border near St. Catherines.

Tennessee Gas Transmission Co.—Start June 1, 22 miles, Natchitoches, La., to Goldonna, La. Oklahoma Contracting Co.

18 miles, under way, Bolivar, Tenn., to Selmer, Tenn. Oklahoma Contracting Co.

47 miles, under way, Springfield, Tenn., to near Bowling Green, Ky. Anderson Bros.

35 miles, under way, Campbellsville, Ky., to Danville, Ky. Western Pipe Line Constructors.

21 miles, under way, Carter, Ky., to Ohio River. Western Pipe Line Constructors.

70 miles, 24-in., under way, Mercer, Pa., to Pigeon, Pa. H. C. Price Co.

60 miles, under way, Pigeon, Pa., to Hebron field, Potter County, Pennsylvania. Bechtel Corp.

Texas Eastern Transmission Corp. — 315 miles, 24-in., under way, Provident City, Tex., to Castor, La. Brown & Root, Inc.

Constracted, Lavaca County to Waller County, Texas. Associated Pipe Line Contractors, Inc.

Contracted, Polk County to Shelby County, Texas. Williams Brothers Co.

Contracted, River crossings of Trinity, Brazos, Colorado, and Saline rivers. Pentzien, Inc.

• **Texas-Ohio Gas Co.**—1,435 miles, 30-in., proposed, Hidalgo County, Texas, through Arkansas, Mississippi, Tennessee, and Kentucky on to Spencer, W. Va. Completion date 6-30-53.

• **Trans-Northwest Gas, Inc.**—246 miles, proposed, International Boundary near Osoyoos, B. C., to Washington and Idaho.

275 miles, branch lines.

• **Union Oil Co. of California**—40 miles, 8-10-in., planned, San Joaquin Valley and Los Angeles Basin.

• **United Fuel Gas Co.**—50 miles, 20-24-in., proposed, Wood County to Lanham, W. Va.

32 miles, 24-in., proposed, near Ripley, W. Va., to Lanham station, Putnam County, W. Va.

• **United Gas Pipe Line Co.**—44 miles, 20-in., planned, Lirette field to Harvey, La.

31 miles, proposed, offshore Gulf of Mexico to Terrebonne Parish, Louisiana.

• **United Natural Gas Co.**—50 miles, 12-in., planned, Elk County to Jefferson County, Pennsylvania.

• **Utah Natural Gas Co.**—103 miles, 16-18-in., proposed, Clear Creek field near Price to Salt Lake City, Utah.

18-in., Clear Creek to Provo, Utah.

16-in., Provo to Salt Lake City, Utah.

Virginia Natural Gas Co.—153 miles, Buckingham to Richmond and Portsmouth, Va.

Warren Petroleum Corp.—78 miles, 2-24-in., proposed, Lovington, N. M. Completion date 9-53.

Westcoast Transmission Co., Ltd.—(See foreign natural gas pipe lines).

• **Western Slope Gas Co.**—39 miles, 8-in., planned, Garnesa to West Douglas Creek, Colo. Foutz & Bursum Const. Co. 10-53.

Wilcox Trend Pipe Line Co. (Harry Bass Drlg. Co.)—157 miles, 14-16-20-in., under way, gathering system for delivery to proposed Texas Eastern terminal at Provident City, Tex. H. B. Zachry. Completion date 5-53.

Under way, Lavaca County to DeWitt County, Texas, and Duval County to DeWitt County, Texas. H. B. Zachry. 5-53.

Under way, laterals and gathering lines. Altgelt Const. Co.

Foreign Crude-Oil Pipe Lines

Arabian American Oil Co.—16 miles, 12-in., under way, loops on Al Kobar, Saudi Arabia to Bahrein Island, submarine lines.

Basrah Petroleum Co.—72 miles, 24-in.,

Cut field welding costs

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50-ft. STEEL PIPE sections

The two illustrations above show one of Southern's steel pipe mills in operation. Note steel coil being fed into mill in top photo.

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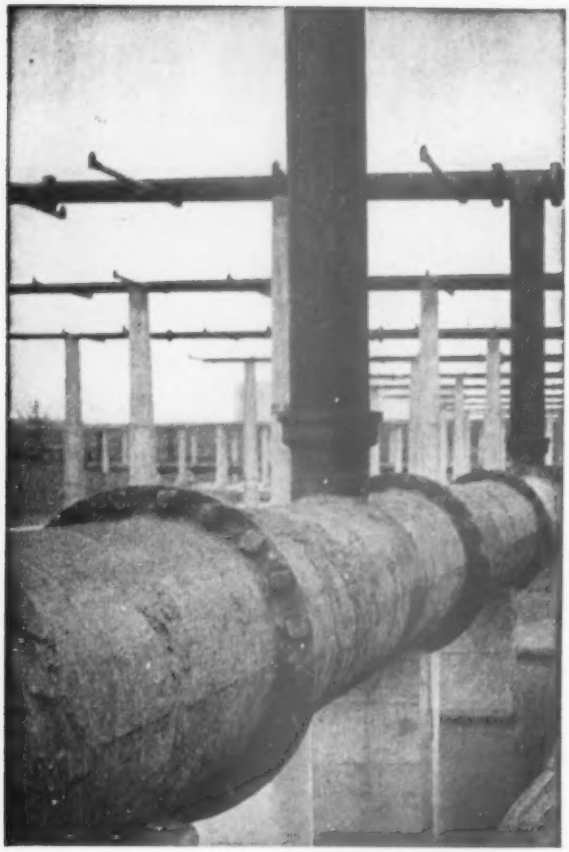

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Ring-Joint Flange showing Flexitallic Style CG-RJ Gasket. Compression-gauge confines gasket on outside. Data sheet on request.

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Send for complete catalog and prices. State kind of service, pressure, temperature, pipe sizes and indicate style at right, threaded, flanged or weld ends.

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under way, Zubair to Fao. Completion date May 1953.

• **Cia. de Petroleo Ganso Azul, Ltd.**—48 miles, 4-in., planned, Ganzo Azul field to Pucalpa on upper Ucayali River, Peru.

• **Creole Petroleum Corp.**—25 miles, 34-in., planned, Lagunillas to La Salina (State of Zulia.)

Direccion General de Yacimientos Petroliferos Fiscales—409 miles, under way, Plaza Huincul to Bahia Blanca, Argentina.

Interprovincial Pipe Line Co.—135 miles, 24-in., looping from Regina to U. S. border, Canada.

• **National Iranian Oil Co.**—38 miles, 12-in., planned, Lali to Masjid-i-Sulaiman, Iran.

27 miles, 12-in., planned, Kut-Abdullah to Zergan, Iran.

• **Petroleos Mexicanos.**—145 miles, 12-in., considered, 18 de Marzo field via Reynosa to Monterrey, Mexico.

100 miles, planned, Isthmus of Tehuantepec, Jose Colomo to El Plan field, Minatitlan.

72 miles, 12-in., proposed, Poza Rica to Atzacapotzalco, Mexico.

Petroleos Mexicanos.—125 miles, 10-in., under way, Jose Colomo to El Plan, Mexico.

• **Saskatoon Pipe Line, Ltd.**—56 miles, 6-in., planned, Milden to Saskatoon, Sask.

Texas Petroleum Co.—60 miles, 4-6-in., under way, Pta. Nino to La Dorada.

• **Trans Mountain Oil Pipe Line Co.**—30 miles, planned, Vancouver, B. C., terminal to Ferndale, Wash.

Trans Mountain Oil Pipeline Co.—711 miles, 24-in., under way, Edmonton, Alta., to Vancouver, B. C. Canadian Bechtel, Ltd., engineers. Completion date 8-53.

Edmonton to Acheson, Canadian Pipe Line Const. 8-53.

Acheson to Blue River, B. C., Comstock Midwestern. 8-53.

Blue River, B. C., to Coquehalla, B. C., Mannix, Ltd. 8-53.

Coquehalla to Vancouver, B. C., Comstock Midwestern. 8-53.

• **Yacimientos Petroliferos Fiscales Bolivianos.**—170 miles, 4-in., planned, Bermejo to Tupiza, Bolivia.

Foreign Products Pipe Lines

Colombian Ministry of Petroleum. — 115 miles, 4-in., begin 1953, La Dorada to Cartago, Colombia, Williams Bros. Engineers.

93 miles, 8-in., begin 1953, Cantimplora to Dorada, Colombia, William Bros. Constructors.

• **Empresa Nacional del Petroleo** — 80 miles, 6⅝-in., planned, Concon to Santiago, Chile.

Empresa de Ferrocarriles Ecuatorianos.—50 miles, 6-in., contracted, Guayaquil to Palmira, Ecuador. J. A. Jones, contractor; C.R.C. Engineering Co., engineers.

• **Governments of Southern Rhodesia and Portuguese East Africa.**—200 miles, considered, Beria, Portuguese Mozambique to Umtalia, Southern Rhodesia.

• **Petroleos Mexicanos.**—124 miles, 6-in., planned, Lagos to Guadalajara, Mexico.

54 miles, 6-in., planned, Lagos to Aguascalientes, Mexico.

82 miles, 8-in., planned, Salamanca to Lagos, Mexico.

• **Shell Co. of Australia.**—58 miles, 8-in., planned, Geelong, Melbourne to Newport, Australia.

• **Sun Pipe Line Co. of Canada.**—200 miles, 8-in., planned, Sarnia, Hamilton, Toronto, Ont.

• **United States Government.**—375 miles, 12-in., planned, St. Nazaire to Melun and Metz, France.

Foreign Natural-Gas Pipe Lines

• **Azienda Generale Italiana Petroli.**—110 miles, 12-14-16-in., Start 11-52. Cortemaggiore to Genoa. Completion date 11-53.

Azienda Generale Italiana Petroli — 90 miles, 12-in., under way, Cortemaggiore to Bologna, Italy, SNAM crews.

120 miles, 16-in., under way, Cremona Porto Mar to Ghera, Italy, Montubi, contractor.

40 miles, 12-in., under way, Ripalta-Bergamo, Italy.

Direccion General del Gas del Estado—310 miles, 8-in., under way, Plaza Huincul to Neuquen, Argentina, to the vicinity of General Conesa, Argentina.

• **Empresa Nacional del Petroleo**—80 miles, 10¾-in., planned, Concon to Santiago, Chile.

• **Mid-Continent Pipelines, Ltd.**—1,860 miles, 30-in., proposed, Alberta to Montreal, Canada. Fish Engineering Co.

• **Northwest Natural Gas Co.**—950 miles, 24-in., planned, Alberta fields to Vancouver, B. C., Seattle, Wash., and Portland, Ore.

Petroleos Mexicanos.—205 miles, 16-in., under way, Monterrey to Torreon, Mexico.

• **Petroleos Mexicanos.**—440 miles, 20-in., planned, Brazil to Tampico to Poza Rica, Mexico.

• **Trans-Canada Pipe Lines, Ltd. (Canadian Delhi Oil Co.)**—2,247 miles, 14 to 30-in., proposed, Alberta to Toronto to Montreal.

747 miles, 8 to 24-in., gathering system in Alberta.

• **Westcoast Transmission Co., Ltd.**—1,110 miles, 24-in., planned, Dawson Creek, B. C., through Pine Pass and Fraser River Valley to Kamloops, Princeton, and Vancouver to Portland. Ford, Bacon & Davis, engineers.

280 miles, 20-in., planned, Pincher Creek to Montana on to Spokane, Wash. Ford, Bacon & Davis, engineers.

138 miles, 20-in., planned, Sumas to Tacoma, Wash.

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* *"Industry's Big Itch", "Occupational Hazards", December 1952.*

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SEE PAGE 500

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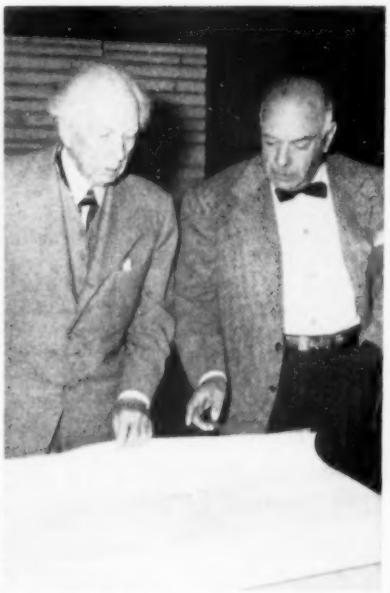
PIPE LINES

MODERNISTIC BUILDING to be erected in Bartlesville by H. C. Price Co. The model shown here will be on display in Tulsa during the International Petroleum Exposition.



BUIDING DESIGNER, Frank Lloyd Wright, at left, discusses plans for structure with Harold C. Price, president of the pipe-line-construction company.

Price Plans Unusual Office Building

BARTLESVILLE, Okla.—An 18-story combination office and apartment building designed by Frank Lloyd Wright, soon will be erected here, according to plans announced by Harold C. Price, president of H. C. Price Co., pipe-line construction firm.

The unique skyscraper, to be known as The Price Tower, will incorporate many advanced concepts of engineering and architecture.

The Price Company, which has maintained headquarters in Bartlesville for 31 years, will occupy the top three office floors of the tower section.

A replica of the colorful skyscraper will be unveiled at the International Petroleum Exposition in Tulsa, May 14.

Rising 186 ft. from the ground, the tower will be composed of four equal and independent sections or quadrants —three to be occupied by offices and one for apartments. The tower portion will be a cantilever-style structure, with the floors and walls suspended from four vertical reinforced concrete supports. The walls will be constructed of concrete and glass. Windows in the tower will be made of gold-tinted glass which will defuse the sunlight and aid in interior illumination.

The construction contract is slated to be let by the end of May, and ground will be broken about the middle of June. Approximately a year will be required for construction of the building.

Due to the unusual design and to the materials to be used, the structure reportedly will weigh only one-seventh as much as a standard building of similar size.

Phillips Laying Outlet for Andrews County-Area Crude

BARTLESVILLE, Okla. — Phillips Pipe Line Co. is beginning construction immediately of a gathering system to carry crude from the producing area of northeastern Andrews County, Texas, to a connection at Andrews Station with the company's main trunk from West Texas to Borger and to Phillips' Oklahoma-Kansas pipe-line system.

All construction materials now are on hand for the 26 miles of 8-in. gathering line and 18 miles of field lines, the company said.

The main line will originate in the center of an extensive block of leases owned by Phillips Petroleum Co., parent firm of Phillips Pipe Line.

The company said considerable development activity is now being carried out in the area and that the new system will be able to serve new pools.

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New Gas Line to Storage Area Built by Ohio Fuel

COLUMBUS.—Ohio Fuel Gas Co. is completing a $522,700 natural-gas line to an underground-storage area southeast of Mansfield, Ohio.

The new line, contracted by Ohio Pipeline Construction Co., Granville, Ohio, will be able to store a total of about 2 billion cubic feet of out-of-state gas during the summer months.

The entire project includes 16½ miles of line from the company's Weaver compressor station southeast of Mansfield to the storage area near Perrysville, rehabilitation of 20 wells, piping changes at the Weaver station, and new measuring equipment.

Ohio Fuel's program has grown from 1 billion cubic feet of gas stored in 1936 to 87 billion cubic feet in 1952.

Texas Gas Resumes Work on Last Sections of 26-In. Loop

OWENSBORO, Ky.—Work has been resumed in Kentucky on construction of Texas Gas Transmission Co.'s 408 miles of 26-in. loops along its main line.

The first 363 miles of the line went into the ground during the last half of 1952.

H. C. Price Co., contractor, currently is engaged in laying the last section—45 miles in Kentucky.

Included in the 1952-53 program was the installation of 26,860 additional horsepower at compressor stations.

Ardmore Gas Line Planned

ARDMORE, Okla.—Oklahoma Natural Gas Co. plans to start construction soon on a 16-mile natural-gas line to Ardmore Air Force Base.

P. K. Wallace, general superintendent, said cost of the project will exceed $250,000. Eight miles of the line will consist of 8-in. pipe and 8 miles will be of 6-in.

The project is in preparation for reactivation of the base.

Radio Permits Issued

WASHINGTON.—Construction permits for two base stations for the pipeline industry have been authorized by the Federal Communications Commission, as follows:

1. Tennessee Gas Transmission Co., base station at Houston to operate on 33.26 mg.

2. American Liberty Pipe Line Co., Mt. Pleasant, Tex., base station at Monticello to operate on 33.34 mg.

• A combination of skilled pipeliners and modern equipment keep the line moving ahead on schedule.

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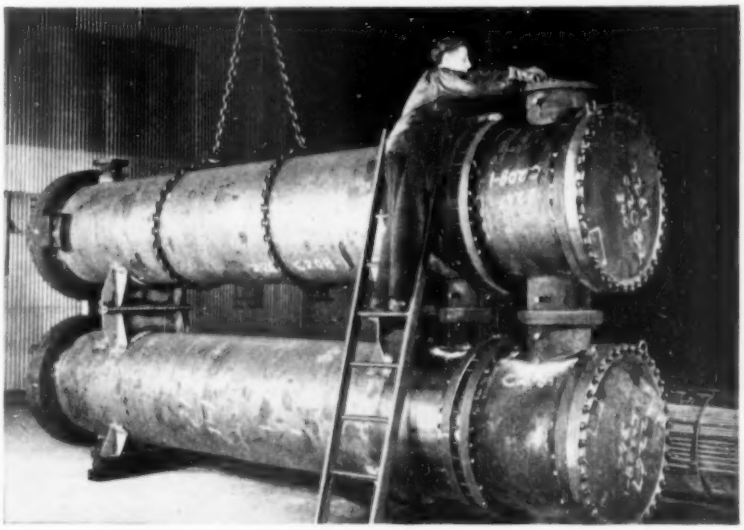
PROCESS EQUIPMENT NEWS

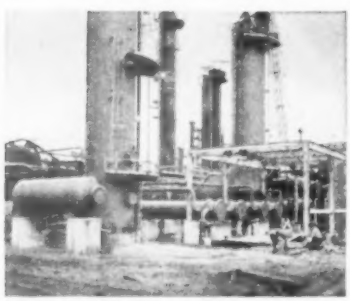
PUBLISHED BY FABRICATED PRODUCTS DIVISION, THE M. W. KELLOGG COMPANY MAY, 1953

Special Units Developed for Sasol Project

In connection with Kellogg's work on the gasoline-from-coal synthesis plant for SASOL in South Africa, a special heat exchanger has been designed for preheating gases from the coal-gasification unit against reaction gas from the reformer.

Five of these units, each capable of operating under temperatures 1775°F and pressures of 365 psi are now being fabricated. Kellogg's extensive experience with the fabrication of hi-pressure — hi-temperature equipment — was a major reason for the decision to fabricate these critical exchangers for this process in the Kellogg plants.





More than 100 Exchangers for Eastern Refinery

Progress photo of sulfur removal unit shows just three of the many types of exchangers included in this one order. Balance of more than 100 units include complete heat exchange requirements for atmospheric distillation, Fluid cat cracking and vapor recovery facilities.

FABRICATED PRODUCTS DIVISION
THE
M. W. KELLOGG COMPANY
225 Broadway, New York 7, N. Y.
or offices in Jersey City, Buffalo, Los Angeles, Tulsa, Houston, Toronto, London & Paris
KELLOGG PULLMAN

Multi-Section Naphtha Cooler Furnished for Eastern Refinery

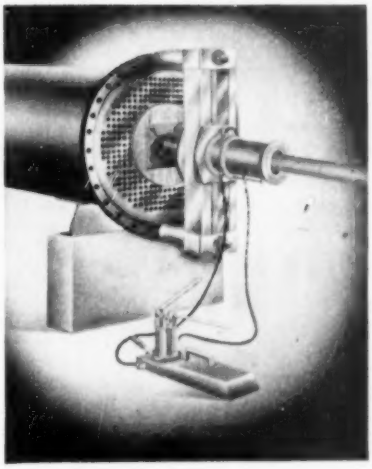
One of several units now being fabricated for a major independent refiner, this debutanizer bottoms cooler is shown here as it is being stacked in the Kellogg plant preparatory to final machining of nozzles. This is done so that when the unit is set up in the field, no further adjustments are necessary.

The unit is constructed using naval brass tube sheets, Admiralty metal tubes, $\frac{3}{4}$ inch, 16 BWG, 16 feet long, arranged on a 1" square pitch. Baffles, floating head cover, channel, shell and channel cover are of carbon steel. In service, the equipment will handle 278,947 lbs. per hour of naphtha on the shell side, reducing its temperature from 290°F to 100°F. On the tube side, 1933 GPM of water is used, the water being raised from 90°F to 120°F.

Kellogg has constructed this unit in accordance with its general practice, namely: TEMA standards and, in addition, the 1950 ASME Unfired Pressure Vessel Code.

Unique Hydro-Ejector Wins Support of Maintenance Men

Sales of this new hydraulic device for removing tube bundles from exchangers are growing steadily both here and abroad, as maintenance men in refineries and other chemical processing plants continue to discover the Hydro-Ejector's many advantages. It is readily portable by *one* man, it pulls bundles faster, is safer for crews, eliminates costly rigging, and in new installations saves material amounts of structural steelwork. Using the device, two men can handle even the largest bundles . . . experience proving that it takes less than 25 minutes to push any sized bundle out eight feet. The Hydro-Ejector can exert a force of 12,000 pounds, sufficient to overcome dirt formations that cause many bundles to stick.



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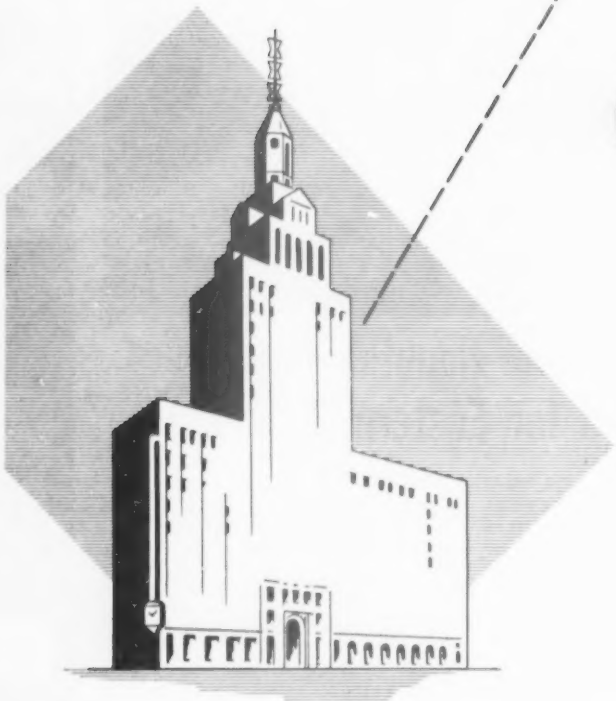

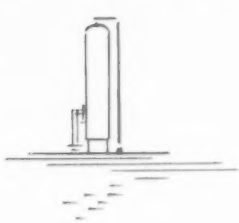

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Among the Drilling Contractors

T. N. Law, Jr., Placed in Falcon Seaboard Office

Theodore N. Law, Jr., son of the president of Falcon Seaboard Drilling Co., Tulsa and Houston, has been appointed director of employe and industrial relations of the company.

T. N. LAW, JR.

Law is a graduate of Tulsa University and also attended the University of Kansas. He has gained first-hand knowledge of oil-field operations by working on the company's drilling rigs in Oklahoma and Colorado.

He spent one year in the U. S. Navy, and has been active in the Young Republican organization and the Tulsa Junior Chamber of Commerce.

Arkansas Contractor to Drill in Western Canada

Betsy Davis Drilling Co., Camden, Ark., is joining the list of American drilling contractors working in western Canada. It has opened offices in Calgary, Alta., and is moving one of its three rigs, a Cardwell Model L assembly, from Arkansas to that region for contract drilling. It is scheduled to start a wildcat test in southern Alberta Province in the near future. The company's other two rigs will continue to operate in southern Arkansas.

The company is headed by C. G. Davis as president, with Fred Kelly, vice president in charge of drilling and producing, and Guy Smith, vice president in charge of the land and geological division.

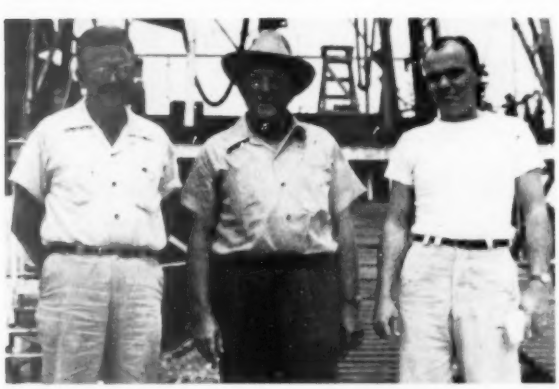
Calvert Purchases Rig For Oklahoma Drilling

Calvert Drilling Co., Oklahoma City, recently organized affiliate of Calvert Drilling, Inc., Olney, Ill., has acquired a U-15 rotary drilling rig from Herman Graham Drilling Co., San Angelo, Tex. The rig will be moved to a location along the Nemaha Ridge play in Oklahoma or Logan County, Oklahoma, where the company is busy developing properties to the joint interest of itself and others. H. K. (Tony) Calvert is general manager of the Oklahoma corporation.

Calvert Drilling, Inc., the Illinois parent firm, has five rigs busy in the Illinois basin, three in Illinois and two in Indiana. In Illinois, one is drilling for Stewart Oil Co. in Hamilton County; another for Cities Service Oil Co. in Wayne County; and the third for its own interest in White County. In Indiana, one is drilling for Carter Oil Co. and one for its own interest, both in Posey County.

Calvert Exploration Co., another affiliate, is rigging up a new rig at Minot, N. D., where it will be busy on wildcat deals in Bottineau, Pierce, and McHenry counties. The company has opened a land office in Bismarck, under the direction of James A. Burhans. Allen (Red) Farmer has been transferred from the Illinois area to Minot, N. D. as drilling superintendent in the new area.

Noble Drilling Corp., Fort Worth, will drill Amerada Petroleum Corp. 1 Lois C. Hobbs, in 3-14s-37e. Projected



W. M. Garland (center), assistant drilling superintendent for Harry I. Morgan, drilling contractor, Shreveport, La., with L. G. Buchanan (left), petroleum engineer, and William Hollingsworth (right), geologist, Sinclair Oil & Gas Co., at the location of Sinclair's deep wildcat test, I H. R. Williams, now drilling on Key Largo, in Monroe County, Florida.

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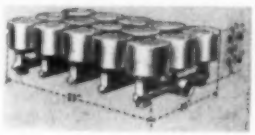

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For 719 days, this Wico Model XHD Magneto operated non-stop on a 40 HP, 900 rpm engine in an oil field. It had only a short "time-out" when it was transferred to a different engine—but with this single exception, it racked up a record of 17,250 hours of continuous operation.

It's service like this that has earned the Wico XHD its reputation as a heavy duty magneto. Long life is built into every part. The coil has a surge winding of larger wire to absorb the electrical strain and prevent breakdown . . . and it's protected by a solid, molded insulating jacket. Big tungsten contacts, single piece cast rotor and hefty pre-lubricated bearings are further evidence of design that withstands the roughest oil field service.

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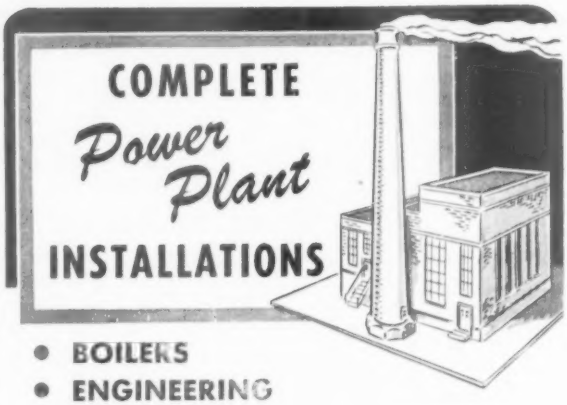

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depth on the Lea County, New Mexico, wildcat is 11,700 ft. Location is about 4 miles southwest of recent Devonian discoveries.

Portable Drilling Corp., Tulsa, has been awarded contract to drill a 5,900-ft. test at Russell Maguire 1 Atkinson, SE NE NE 13-16n-2w, Logan County, Oklahoma. Tools are being moved to the new location.

Thompson-Carr Drilling Co. is contractor for a new Lea County, New Mexico, wildcat. The 11,800-ft. rotary test will be Shell Oil Co.'s 1 EA State, 660 ft. from north line and 658 ft. from east line in Section 12-11s-37w.

Kemp Drilling Co. has been awarded contract for an outpost test at Hiwannee field in Wayne County, Mississippi, at Gulf Refining Co. 1 Chapman Smith unit, 2,030 ft. from south line, 660 ft. from east line, Section 13-10n-7w. Proposed depth of the outpost is 9,700 ft. to test the Glen Rose formation. **Southeastern Drilling Co.** will handle contract for another Gulf test in the field area at 1-A Chapman et al. Unit, Section 19-10n-6e.

Dixon Drilling Co. has a new water-located wildcat operation under way. It is a test being drilled for C. G. Glasscock and Humble Oil & Refining Co. in Copana Bay, Aransas County, South Texas. Location is designated as 2 State, and is on State Tract 11, 7 miles northwest of Rockport, and 850 ft. southeast of the Refugio County line. A barge-mounted rig is being used. Projected depth is 8,000 ft.

Crawford Drilling Co., Shreveport, has contracted with J. C. Vaughn, Jr., independent operator, Jackson, Miss., for a lower Tuscaloosa test at 1 Creosote, in 10-1s-13w, Forrest County, Mississippi. Projected depth is 8,750 ft.

ACTIVE ROTARY RIGS*

Area—	Week ended 5-11-53	Change week ended 5-4-53	Change week ended 5-12-52
Gulf Coast	609	— 7	— 7
N. & W. Tex.-N. M.	820	+22	—232
Ark.-N. La.-E. Tex.	121	+ 1	— 21
Oklahoma	349	+ 1	+ 3
Kans.-S. Nebraska	173	—15	— 11
Illinois-Eastern	111	—10	— 33
Rocky Mountains	226	+ 1	+ 22
Pacific Coast	167	— 1	+ 8
Total U. S.	2,575	— 8	—271
Western Canada	132	—10	— 49
Total	2,708	—18	—320

*Courtesy Hughes Tool Co. Trends in drilling activity in the United States, Rocky Mountains, and western Canada are shown on pages 507 and 508.

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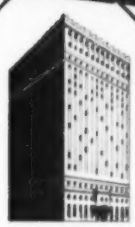

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REFINING

McMurrey to Install New Units at Tyler, Tex., Plant

TYLER, Tex.—McMurrey Refining Co. has announced plans for an extensive expansion program at its refinery here.

The project will include installation of an 8,000-bbl. per day feed-preparation and decarbonizing unit and a 10,000-bbl. crude-oil topping unit. The program will result in increased throughput and higher yield of premium quality gasoline.

The Chemical-Plants Division of Blaw-Knox Co., Tulsa, has been named engineering contractor for these units.

The feed-stock decarbonizing unit is basically a thermal coking mechanism which will operate on residual-fuel charge under selective temperature and pressure completions to obtain minimum coke and gas and maximum yield of distillate for cat cracker charge stock.

One feature of the new McMurrey installations will be a circular control building in the center of the approximately triangular plot of land on which the new units are to be erected.

Sohio Lets Contracts for Work at Two Ohio Plants

CLEVELAND. — Standard Oil Co. (Ohio) has let contracts totaling $300,000 for new construction at its Cleveland and Lima, Ohio, refineries.

Elliott B. McConnell, vice president in charge of manufacturing of Sohio, said a $200,000 contract was let to Arthur G. McKee & Co. for construction of a continuous naphtha and kerosine-treating plant at company's No. 1 refinery at Cleveland. McKee also was awarded a contract for construction of tankage at the company's Lima plant. Work is to start as soon as possible on the two projects, McConnell said.

A $16,000 contract was let to Industrial Construction Co., Inc., for construction of dikes, grading, and similar work at the Sohio products and process-development laboratory in Cleveland.

Kellogg Gets License to Build New Cat Reformer

NEW YORK. — Sinclair Oil Corp., Baker & Co., Inc., and M. W. Kellogg Co. announced last week that an agreement had been reached whereby Kellogg will offer a new catalytic reforming process employing the new RD-150 catalyst developed by Sinclair and Baker.

The Kellogg process for reforming naphthas to high-octane gasoline will be of the fixed-bed type of a new design specially developed for the Baker catalyst.

Kellogg spokesmen pointed out that in this connection the company's in-

Newest of the Nation's Refineries

Shown here is the 170-acre site of the new International Refineries, Inc., refinery at Wrenshall, Minn., near Duluth. The 11,500-bbl. plant began initial operation early this month, processing Canadian crude oil obtained under a 10-year contract with Interprovincial Pipe Line Co. (The Oil and Gas Journal, May 11, page 159). Process equipment includes fluid catalytic cracking and polymerization units. The plant is engineered for fully automatic operation with central-control station facilities for remote inspection of operating conditions, according to H. M. Baskerville, Sr., president of the company.

terest in the new catalyst and process does not affect its position in regard to the fluid catalytic reforming process employing a molybdenum catalyst, which will continue to be offered for particular applications.

Esso Standard Completing Cat Unit at Everett Refinery

EVERETT, Mass. — Esso Standard Oil Co. will place New England's first cat cracking unit on stream at its refinery here in the next few weeks.

The cat cracker, being built by Foster Wheeler Corp., will have a capacity of 18,500 bbl. daily. It will replace a combination cracking unit with a daily capacity of 15,000 bbl. The expansion program will increase refinery throughput from 32,500 to 38,500 bbl. daily.

Also included in the expansion program are a light-ends recovery plant, a fractionator, a gas-compressor plant, and a 7,000-bbl. rerun unit.

Pure Oil Affiliate to Build Alkylation Plant at Toledo

WASHINGTON. — American Mineral Spirits Co., a subsidiary of Pure Oil Co., has signed a contract to construct a 1,450-bbl. daily alkylation plant at Pure's refinery at Toledo, Ohio, to produce for the Armed Services.

The company signed a facilities contract under which the Government will underwrite the cost of the plant. The contract is now being processed for approval by the Armed Services Petroleum Purchasing Agency.

With this contract, the ASPPA has secured, all told, the development of facilities for the production of 7,250 bbl. daily of alkylate.

Shell Oil Develops TCP, New Gasoline Additive

NEW YORK.—Shell Oil Co. has described TCP, its new gasoline additive as the "biggest development in motor fuel since the introduction of tetraethyl lead."

The new ingredient will be supplied in 16 cities this month and will be made available on a nation-wide scale in about 90 days. F. S. Clulow, manufacturing vice president, said "it gives the average car up to 15 per cent more power, more mileage, and from 50 to 150 per cent longer life for spark plugs."

Clulow said TCP is a cresyl compound. It is the result of research Shell began for the Air Force more than 5 years ago. It has been used in Navy fighters and Air Force B-36 bombers for the past 2 years.

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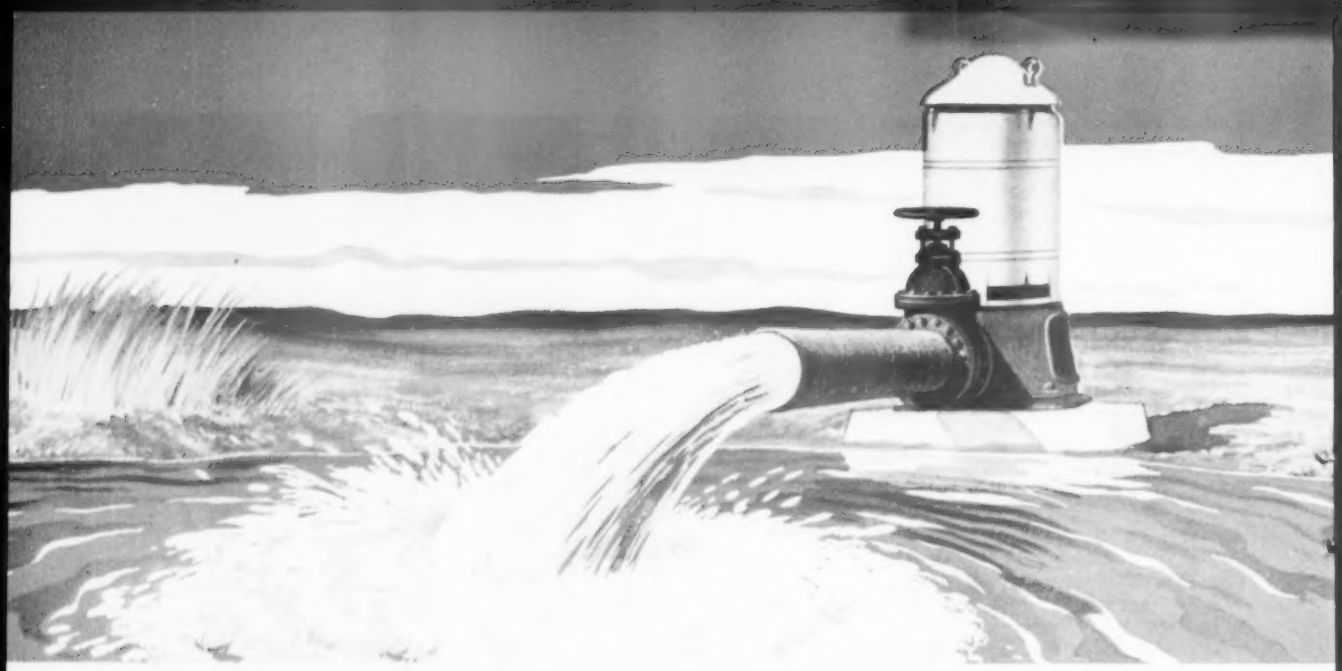

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NATURAL GAS

Gas Line From Canada to Pacific Northwest Opposed

NEW YORK.—N. Henry Gellert, president of Seattle Gas Co., said recently that plans to build a natural-gas pipe line to the Pacific Northwest from Canada should be abandoned in favor of building a line from New Mexico.

Speaking before the New York Society of Security Analysts, Gellert said it will take over $20 billion in the next 20 years to supply present natural-gas demands and this money should be confined to the United States. He said the economy of the northwest region might become "a vassal of a foreign nation" under the Canadian pipe-line plan.

Among the advantages accruing from a line from New Mexico would be development of the San Juan basin and the encouragement of gas exploration, Gellert said.

Cabot Opens New Research Lab at Cambridge, Mass.

CAMBRIDGE, Mass.—Godfrey L. Cabot, Inc., world's largest manufacturer of carbon blacks has dedicated its new research laboratories at 38 Memorial Drive, in this city.

Nine separate laboratories, for compounding, physical testing, pigments application, ceramics, organic, analytical, electron microscope, physical research, and pilot-plant investigations are included in the four-story building.

The new technical center for Cabot and subsidiaries also houses administrative offices and a library.

FPC Headquarters Moved

WASHINGTON.—The Federal Power Commission has completed its move to new quarters and this week began operations from the General Accounting Office Building, 441 G Street, N. W.

All commission hearings formerly scheduled to be held at 1800 Pennsylvania Avenue will be held at the new address, it was announced.

Gas Sales Up in March

NEW YORK.—Natural-gas sales amounted to 5,024 million therms during March, as compared to 4,967 million therms in March 1952, the American Gas Association has reported.

For the 12-month period ending March 31 natural-gas sales totaled 49,800 million therms, a 6.5 per cent boost over sales during the same period a year earlier. The index of March sales was 177.6 per cent of the 1947-49 average.

Speedup Action Defeated

AUSTIN, Tex.—A motion to speed up action on a bill allowing the Railroad Commission to set minimum prices in the Panhandle natural gas field has been voted down by the House of Representatives.

Rep. Hazlett, of Borger, moved that the House oil and gas committee report immediately on House Bill 16. The vote was 62 to 48 against his request.

Texas Legislature Passes Bill for Co-op Gas Plants

AUSTIN.—The Texas Legislature has approved and sent to Governor Shivers a bill permitting the Texas Railroad Commission to approve agreements providing for construction and operation of cooperative natural-gasoline plants and facilities "for the conservation and utilization of gas."

The bill provides that such agreements shall be approved only after it has been determined that the projects are in the interest of conservation and that secondary-recovery operations are neither feasible nor necessary.

Need for such a law, the bill says, is due to the fact that large amounts of gas are sold to transmission lines without removal of liquid products, that these are later removed in other states, and that such sale constitutes a waste of the state's resources.

NATURAL GASOLINE

Unique Plant

Packaged unit for swamp installation on exhibit

TULSA.—An unusual, compact natural-gasoline plant which soon will be barged into a remote swamp area of southern Louisiana is on display here this week during the International Petroleum Exposition.

The unit, designed so that all major equipment is mounted on one skid, is being exhibited at the Moorlane Co. plant, where it was fabricated. It was designed and engineered by Blaw-Knox Co., Tulsa.

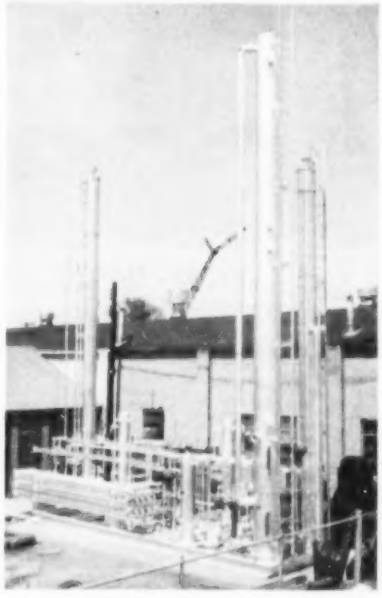
The packaged plant features complete instrumentation, including emergency shutdown, so that it can be operated without difficulty by lease personnel in addition to their regular duties.

The unique gasoline plant after being exhibited here will be moved by rail to Berwick, La., and from there 48 miles by barge to a site in Lake Chicot field, St. Martin Parish, Louisiana.

Owners of the plant are Amerada Petroleum Corp. and Phillips Petroleum Co., with Amerada as the operator.

The liquids-extraction plant is to be mounted on a piling structure. It will handle about 2,500,000 s.c.f. per day of 50-psi. wet gas. Liquids extracted by absorption will be moved with the crude-oil stream moved by pipe line from the field. Residue gas will be used as plant fuel.

Compressors are gas-engine driven. Process pumps are standard direct-acting steam pumps, but with residue gas replacing the steam as the driving medium. The water pump is gas-engine driven. Residue gas also is employed instead of air in the instrument lines.



SKID MOUNTED PLANT is on exhibit during the International Petroleum Exposition at Moorlane Co.'s plant in Tulsa.

The compact skid mounting of the major equipment items is expected to facilitate mounting of the packaged unit on the pile structure and to minimize field labor requirements in erection. Design of the unit is such that the plant can be moved easily to a new location if necessary. Relatively quick payout is expected on the initial investment.

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EXPLORATION

"The Story of Geology"

by Philip C. Ingalls

THE Hall of Science at the International Petroleum Exposition is divided into six sections: geology, geophysics, development and production, transportation, refining, and petrochemistry. Since last November each of these sections has had a committee working to secure suitable exhibits for its respective field.

The job of the geological committee was to obtain exhibits that would tell the part that geology plays in the oil industry. This committee was soon to recognize that available exhibits would be uninteresting and meaningless to a majority of the hall's visitors; and also, that an ordinary exhibit of rocks, fossils, and the few simple tools of the geologist would be rather forlorn compared to the exhibits of the other five branches of the industry which could feature intricate instruments, fascinating working models, and exhibits with high popular appeal.

The committee decided to attempt the construction of an exhibit which would tell a coordinated story of geology in a way that would attract and hold attention of the general public and still be technically sound.

The committee was long on ideas and short on cash. It turned to the Tulsa Geological Society for help. The executive council of the society, recognizing the society's responsibility in this opportunity to assist with a worthwhile public relations job, was quick to vote full cooperation. A committee of the society was appointed to solicit funds from the larger companies operating in northeastern Oklahoma. The immediate results of that committee's efforts were gratifying and the exhibit began to materialize. Though limited funds prohibited the incorporation of all of the ideas of the Hall of Science's geological committee, the announcement that the exhibit was to become part of a permanent oil-industry museum prompted the decision to construct the basic elements of the exhibit and then add details if and when more money became available.

The result of 4 months' work is a booth planned by geologists, designed by a commercial artist, and constructed by a well-qualified company. This

SEE ARTICLE ON HALL OF SCIENCE IN NEWS SECTION OF THIS ISSUE FOR PHOTOGRAPH OF GEOLOGICAL EXHIBIT.

booth is 26 ft. long, 8 ft. tall, and varies in depth from 2 to 8 ft. It is divided into four panels set at angles to each other. (The photograph in the news section shows only two of these panels.)

1. The panel at the left consists of a three-dimensional landscape from the mountains to the sea, painted in natural colors and lighted by six hidden lamps with various colored filters to give realistic colors and depth. At the front of the diorama is a four-colored subsurface cross-section which corresponds to the hypothetical model of the surface and includes various structures and oil traps. Beneath the diorama is a geologic time table lighted in four colors which shows the development of life through the eras by line drawings. Models of prehistoric animals and samples of rock types and brightly colored minerals are on shelves at the left corner of this panel. Out from this portion of the booth is a viewing platform for children and, on an upright shaft, is a 36-in. model of the world, lighted and slowly rotating.

2. A panel set at an angle to the diorama gives brief explanations of the erosion-deposition sequence and accumulation of oil illustrated in the diorama and cross-section and of the geologic time table. Here the committee tried to tell the story simply but in a way that would not offend the most exacting geologist.

3. The next panel to the right shows "geologists at work" by means of two large and four small photographs illustrating surface and subsurface studies. Tools shown in these photographs are displayed elsewhere in the exhibit area.

4. The panel to the far right is devoted to "Oil Seeps—the Best Indicators of Oil Pools." This display consists of three photographs and six cross-sections of oil seeps and includes explanatory notes.

If geology is going to attract the necessary manpower needed to find the oil this country must produce, geologists are going to have to become public-relations minded. The booth at the Hall of Science is but a step in the right direction.

HIGHLIGHTS OF WEEK'S DEVELOPMENTS

WYOMING . . . Sun Oil Co. recovered 2,550 ft. of 49.2°-gravity light amber oil on drill-stem test of the third Frontier at 1 State, C NE NW 18-56n-101w, Park County, an apparent discovery south of Badger Basin field.

MONTANA . . . Shell Oil Co. recovered 1,478 ft. of gassy 36°-gravity oil on test at No. 32-11-B, C SW NE 11-12n-56e, 3 miles northwest of Pine Unit, Prairie County. Sun Oil Co. and Phillips Petroleum Co. have run tubing and are preparing to test at 1 Dynneson, C SW NE 32-24n-58e, Bronson area, Richland County. This indicated Ordovician discovery is the deepest well ever dug in Montana.

OKLAHOMA . . . Carter Oil Co. and Stanolind Oil & Gas Co. 1 Oliver P. Kinnamon, Beaver County discovery well in C SE NE 23-5n-23eCM, has been completed flowing 2,940 M.c.f. of gas per day through open tubing from Chester perforations at 6,484-6,510 ft.

WEST TEXAS . . . Phillips Petroleum Co. 2-CC University has extended Devonian production ½ mile north, and has added the Ellenburger as a second pay for Northeast Andrews field. Continental Oil Co. 1 McCollum & Weibusch, Wolfcamp discovery southeast of Andrews, gaged 110 bbl. of oil in 3 hours on test at 8,924-54 ft. Indicated pay section totals 246 ft.

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OKLAHOMA: Oklahoma City, phone CEntral 2-5342 — Pauls Valley, phone 1577 — Seminole, phone 2938
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Drilling wells, and recent failures, in the Delaware basin area of Southeast New Mexico and West Texas. Central basin platform fields, encircled, border the basin on the east.

Parker Drilling Co.'s heavy-duty rig on location at Gulf Oil Corp. 1 Northrup in Reeves County. Completion time was 490 days and total depth was 16,696 ft.

DELAWARE BASIN ROUNDUP

Gulf Sets New West Texas Depth Record

The Delaware basin, with its approximate 10,000 sq. miles in area, ranks high with geologists as offering probable future sources of production, not only in the deep and little-tested Paleozoics, but in the Delaware mountain group and older Permian rocks. Richardson & Bass 1 Cobb-Federal tested some oil in the thick Delaware sand section, and Sun Oil Co. 1 Harper-Federal developed 3,600 ft. of clean oil on drill-stem test of the deeper Bone Springs black shale. It is believed that sediments throughout the basin offer petroleum sources in the black shales and limestones of both Permian and pre-Permian age, but reservoirs remain to be located by the drill.

by Carl Hoot

GULF OIL CORP. has completed another chapter on deep exploration in the Delaware basin. No. 1 Northrup, southeast of Pecos in Reeves County, was halted on May 7 at 16,696 ft., a new depth record for West Texas. At that time, operators had recovered a core barrel which had been lost in the hole to cause the only delay experienced in drilling the deep hole.

The 1 Northrup (1 on map) started drilling in January 1952, and while its cost was high, geologists have said its contribution to the little-known geology of the basin may be worth many thousands of dollars for each foot drilled below 16,000 ft. Even as a dry hole, it will afford control for further exploration.

When 1 Northrup reached 16,000 ft., other lease holders in the area came in with support money to carry the hole deeper. There were no unusual mechanical difficulties experienced in drilling the well, and the contractors were confident of being able to reach 17,000 ft., at which depth it was expected that Devonian rocks would be topped.

A summary of activity in the Delaware basin, by counties, with wells keyed to the accompanying map by number, follows:

Reeves County

2 . . . Remaining deep test for the county is Magnolia Petroleum Co. 1 J. Marvin Rape. Operators were swabbing and testing a lime and shale section, tentatively identified as Wolfcamp. Swabbing produced 38 bbl. of new oil and 97 bbl. of acid water in 24 hours. A previous drill-stem test from 10,074-10,103 ft. had gas at the surface in 14 minutes, estimated up to 70,000 cu. ft. daily, and recovered 1,350 ft. of heavily oil and gas-cut mud.

On elevation of 2,757 ft., tops were: Delaware lime 5,200 ft., sand 5,228 ft., and Wolfcamp 10,082 ft.

3 . . . Lawless Drilling Co. 1 Chamblee, Delaware test 13 miles northwest of Pecos. Completed dry last week at 4,052 ft. after finding the Delaware lime at 3,950 ft.

4 . . . Buffalo Oil Co. 1 Herman Lindley, Delaware test 8 miles southeast of Orla. Operators were ready to run production tests after finding fluorescence and stains at 3,394-99 ft., and swabbing 2 gal. of oil in 4 hours. Top of the Delaware lime was 3,350 ft.

Pecos County

Glenna area . . . Geologically located in the Sheffield channel rather than within the Delaware basin proper, Phillips Petroleum Co. currently has six Ellenburger wildcats drilling on its Puckett lease, in an effort to confirm

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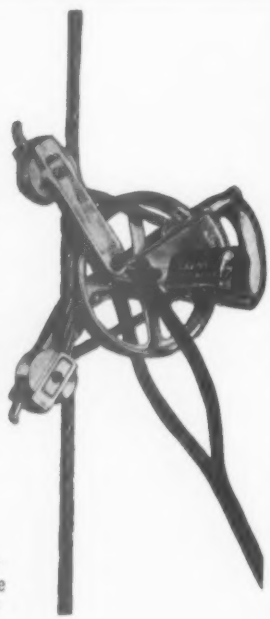

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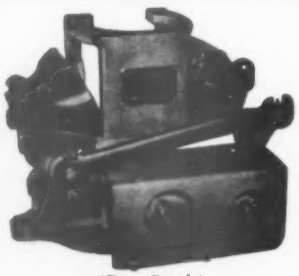

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Ellenburger gas-distillate production discovered in Glenna pool.

Phillips 1-A Puckett "B" had total depth at 16,053 ft. and was testing up the hole. Shows of gas were found around 7,850 ft. and a small flow of gas was made on drill-stem test from 8,304-8,406 ft. Drill-stem test at 10,900-64 ft. recovered some gas-cut mud.

Phillips 1-C Puckett had total depth at 14,904 ft. Drill-stem tests had oil-cut mud at 6,300 ft., and 516,000 cu. ft. of gas daily at 9,015 ft.

Phillips 1-D Puckett had total depth at 14,320 ft. Gas-cut mud was recovered in this test at 7,390-7,419 ft., and light shows on test from 11,080-11,125 ft.

Phillips 1-E Puckett had total depth at 13,960 ft. Gas shows were reported on this well around 6,200 ft. Phillips 1-F and 1-G were drilling below 7,504 and 10,700 ft., respectively.

2 . . . Cities Production Corp. and Stanolind Oil & Gas Co. 1 Payton, a western-edge test of the basin. This well was originally scheduled to 11,500 ft., but encountered high gas pressures while drill-stem testing around 5,500 ft., and may be completed for a gas-distillate well from that section. Gas flow, which had to be turned loose because shallow producers nearby cratered when blowout preventers shut it off, was estimated as high as 300,000,000 cu. ft. daily. Estimates were on the basis of gages, which broke when the flow exceeded their capacity.

3 . . . Standard Oil Co. of Texas 1 Claude Owens-2, another Sheffield channel test, scheduled to 10,500 ft., and drilling below 3,334 ft.

4 . . . Stanolind Oil & Gas Co. 1 Pryor, 8 miles southwest of Fort Stockton, drilling below 6,273 ft. in sandy shale, on a 7,000-ft. contract. No shows have been reported.

Ward County

1 . . . Argo Oil Corp. 1 John Olson, 7 miles northeast of Barstow. This well completed as a Delaware sand discovery last week, flowing 42 bbl. of 38°-gravity oil a day. Total depth was 5,132 ft.

2 . . . Continental Oil Co. 1 Cynthia Monroe, temporarily abandoned last week at 5,688 ft. This well made several small flows of oil from around 5,600 ft., and later gaged over 1,000,000 cu. ft. of gas a day from perforations at 4,874-84 ft. Top of the Delaware sand was 4,790 ft.

Loving County

1 . . . Sun Oil Co. 1 J. B. Tubb, a 15,000-ft. wildcat 24 miles northwest of Mentone. Elevation is 3,019 ft. Drilling below 8,046 ft. in lime and shale.

Culberson County

1 . . . El Paso Natural Gas Co. 1 J. M. Montgomery-State. Drilling below 2,622 ft. on projected depth of 8,000 ft. Location is near the western rim of the basin and that depth can be expected to penetrate the entire Pennsylvanian section, and possibly into the Ordovician. Elevation is 4,492 ft.

Gulf Oil Corp. drilled its 1 Grisham-Hunter about 8 miles to the southwest and found the Pennsylvanian at 7,657 ft. This was on elevation of 5,696 ft., and plus 1,961 ft. on the formation. Deepest marker here was the Ellenburger at minus 111 ft.

Southeast New Mexico

Lea County

1 . . . Sun Oil Co. 1 W. E. Harper-Federal. Location in 26-25s-35e is near the eastern edge of the Delaware basin, but still in a deep section, and representing an important control point for future exploration. Sun plans to drill ahead so long as feasible, and hopes to reach the Devonian. Total depth was 14,842 ft. last week.

This well had top of the Bone Springs

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shale at 8,690 ft., and a tentative top on the Strawn at 13,135 ft. Perforations from 11,661-89 ft., apparently still in the Permian, yielded up to 44 bbl. of oil a day by swabbing. A drill-stem test at 12,930-50 ft. recovered a small amount of heavily oil and gas-cut mud, plus 45 ft. of clean, 40° oil. Operators reported a drilling break at 13,325-31 ft. and the well started to kick, but a test of the section recovered water blanket and gas-cut mud.

Eddy County

1 . . . Richardson & Bass 1 Cobb-Federal, near the northern limits of the basin in 23-20s-31e. Operators were drilling ahead in dolomite below 15,828 ft. Pre-Permian formation tops were Mississippian 13,680 ft. and Devonian 14,395 ft. Elevation is 3,515 ft. A drill-stem test at 14,710-14,830 ft., open 2 hours, recovered mud with no shows. There have been no tests in this area, within the basin, to offer geological control.

2 . . . Richardson & Bass 1 Fidel-Federal, 15 miles east of Carlsbad in 27-21s-29e. Operators were drilling below 12,229 ft. in lime and shale at last report. No pre-Permian sample tops have been announced, but it is believed that the drill has penetrated the Permian. Elevation is 3,433 ft. Top of Delaware lime was 3,253 ft.

3 . . . Richardson & Bass 1 Harrison-Federal, 25 miles south of 1 Cobb-Federal in 12-25s-30e. Drilling ahead in lime and shale below 13,292 ft. at last report. Top of Delaware lime was 4,048 ft. on elevation of 3,378 ft. A drill-stem test in an unidentified formation from 12,215-12,365 ft., open 2 hours and 49 minutes, sprayed gas and distillate in 1 hour, then yielded 8.28 bbl. of 55° distillate in 1 hour, with gas flow unestimated. A core from 12,-984-13,304 ft. recovered 50 ft. of black shale and lime, with no show, indicating the possibility of the well still being in the Bone Springs shale (lower Leonard group of the Permian).

4 . . . Stanolind Oil & Gas Co. and Gulf Oil Corp. 1 Guadalupe Foothills Unit, 10 miles southwest of Carlsbad in 20-22s-25e. Location is just within the northern limits of the basin, as it is known so far.

A drill-stem test at 10,680-10,742 ft., identified as Pennsylvanian, had gas in 12 minutes and reached a maximum flow rate of 8,000,000 cu. ft. daily. Recovery at the end of 5 hours was 120 ft. of slightly gas-cut mud, with no shows of oil or water. Flowing pressure declined to 50 psi. A previous drill-stem test at 8,740-8,825 ft. had gas-cut mud. Elevation is 3,961 ft.

CALIFORNIA

Continental Adds Deeper Pay at San Miguelito

Continental Oil Co. has added two new deeper producing zones to San Miguelito field, adjacent to the Pacific Ocean in Ventura County. The Pliocene sands have been productive as the D-5 and D-6 zones at Ventura Avenue but heretofore have not been productive at San Miguelito. The well, Continental 601 Grubb, thus is in effect an extensioner to Ventura Avenue.

The discovery recorded a flow of 1,142 bbl. of 30°-gravity crude daily, with production coming from perforations at intervals between 8,219 and 10,027 ft. The flow was

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through a 40/64-in. bean and was accompanied by 1,129 M.c.f. of gas.

Located on the extreme southeast end of San Miguelito, 601 Grubb is believed to be separated from other field producers by faulting. Its successful completion therefore opens a large area along the northern flank of the field for further drilling.

Standard Testing Potential San Fernando Valley Find

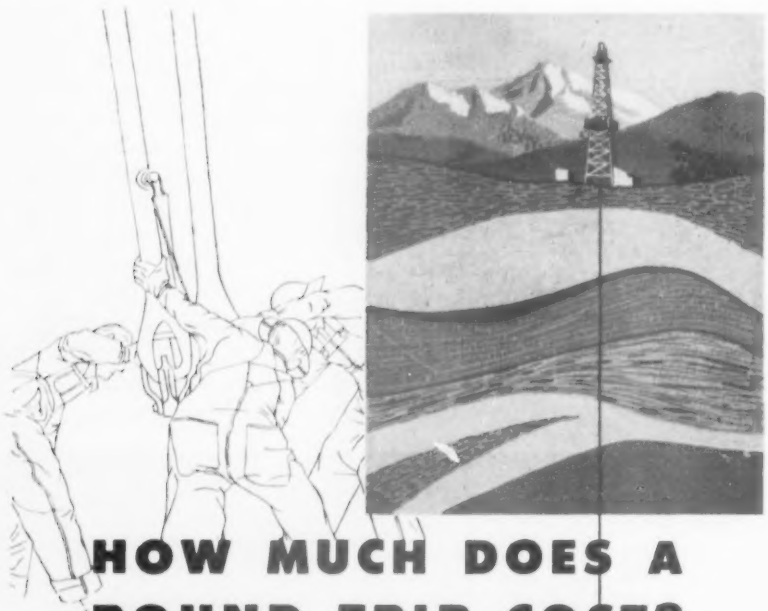
Standard Oil Co. of California was preparing to start a pumping test of its potential oil discovery in San Fernando Valley, approximately 1½ miles southeast of Aliso Canyon field.

The wildcat, 6-1 Mission in 2-2n-16w, on a 1-hour formation test at 7,200-7,338 ft., yielded about 2,500 ft. of gassy 22°-gravity oil and mud. Following the cementing of 7-in. casing at 7,215 ft. and the running of a liner to bottom, pumping equipment was being installed. Completion would result in a new field discovery in an area not too well explored by 5,000-ft. and deeper tests.

Shell Testing Brea Deep Extensioner

Shell Oil Co. was preparing to test a wildcat ½ mile north of the Tonner area in Brea Olinda field, Orange County, which may yield a new deeper pool. Bottomed at 10,019 ft., 5-in. liner had been landed at 10,014 ft., including perforations at 7,693-9,988 ft. Seven-inch casing was at 7,637 ft. when that depth was reached earlier this year.

Shell has not released the results of any formation tests made in the wildcat, 12 Menchego in 1-3s-10w. Drilling activity on the north flank of the area previously has been confined to 6,500 ft. and shallower sands. Shell 13 Menchego, ½ mile southwest of the potential discovery, recently was reperforated at about 6,460 ft. to yield a small producer.



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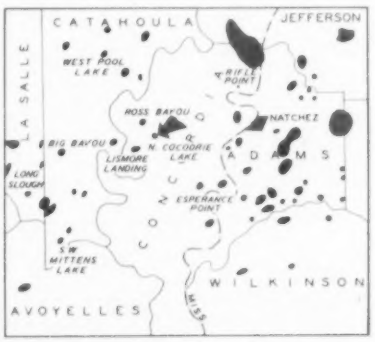
LOUISIANA

NORTH LOUISIANA

New Wilcox Discovery Reported in Concordia

Western Concordia Parish in east central Louisiana has a new Wilcox sand discovery at Billups Bros. and Vasser & Brown 1 B. B. King et al. The new pool, tentatively named North Cocodrie Lake, is located in Section



Arrow indicates new Wilcox discovery in Concordia Parish. The new discovery has been tentatively named North Cocodrie Lake.

1-6n-7e, about ¾ mile northeast of Cocodrie Lake, 3¼ miles east of Ross Bayou field, opened in 1952, and 2⅝ miles northeast of Lismore Landing field.

Production at the new discovery is from perforations at 5,310-15 ft. in the upper 5 ft. of a 14-ft. Wilcox oil sand. The well flowed at the estimated rate of 230 bbl. of oil with gravity being 40.5°. The sand is a new Wilcox producing zone for this area of the Wilcox trend that extends across central Louisiana into southwestern Mississippi.

About 1½ miles northwest of nearest production in Esperance Point field, eastern Concordia Parish, Justiss-Mears Oil Co. and Barnett Serio are drilling below 3,600 ft. at a new Wilcox wildcat, the 3 Hugh Junkin et al in Section 1-5n-9e. Production will be sought to about 7,000 ft. to test the Campbell sand and other producing sands in the area.

April Activity Slow

Exploratory work in northern Louisiana was slow during April. No new discoveries were made during the month, but the outlook for May is considerably brighter. Already one new discovery is noted in Concordia Parish and several wildcats are testing or waiting on final gages.

A total of 51 crew weeks were consumed during April in the area by geophysical work. There were 49 seismographs and 4 core-drills at work. Bienville Parish led the area with 14 crew weeks.

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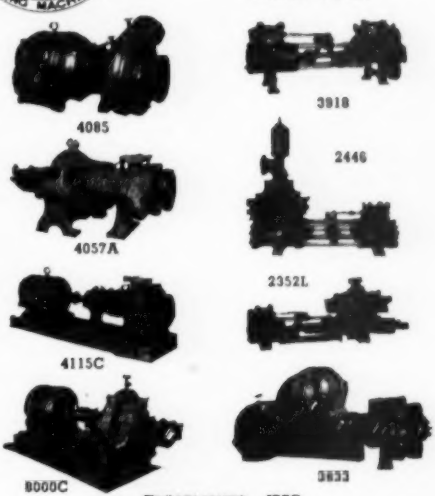

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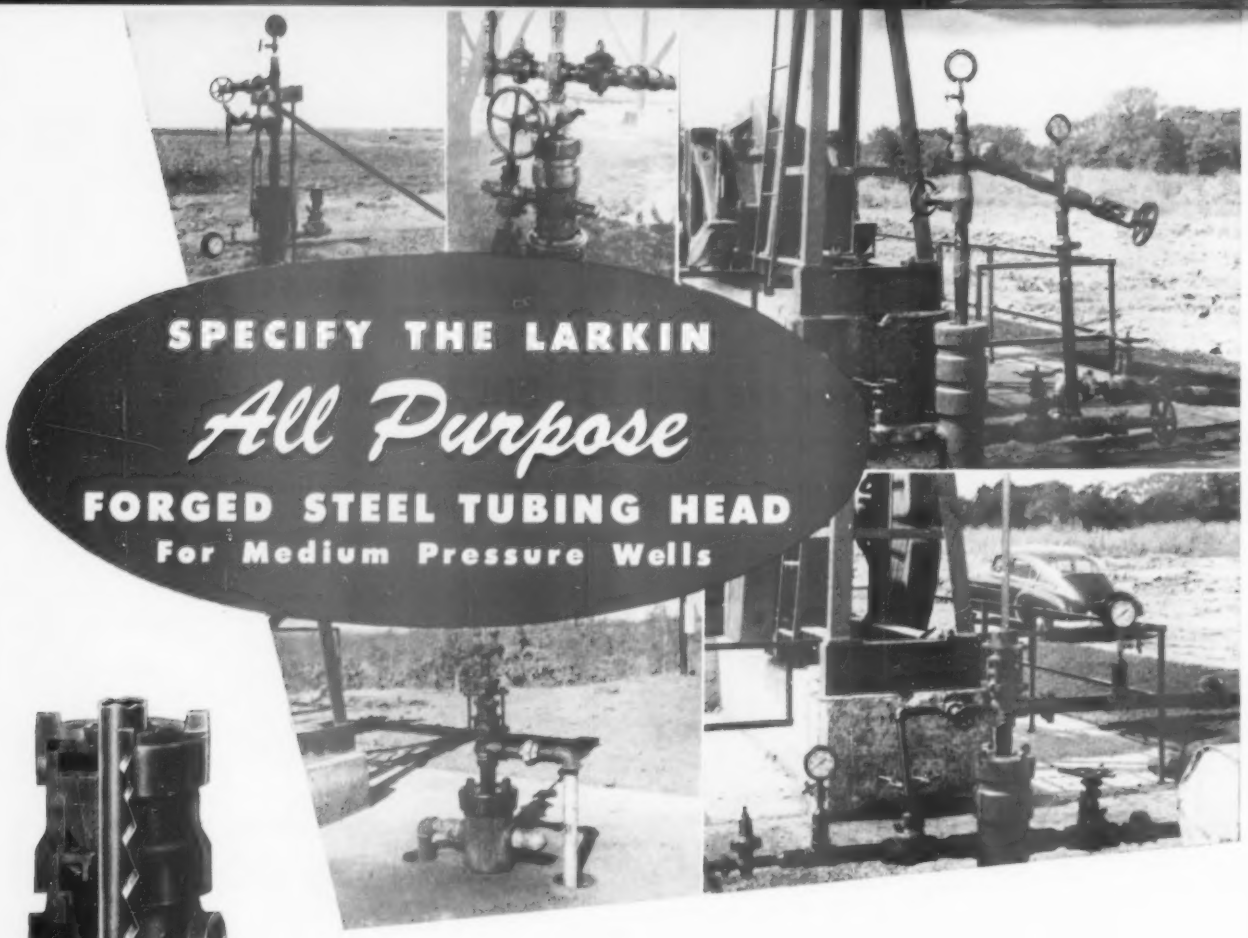

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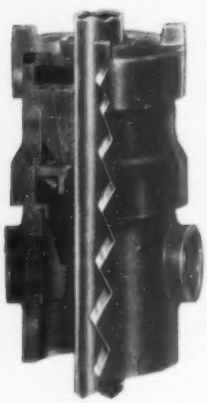

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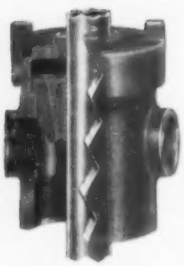

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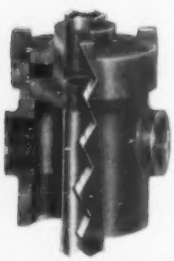

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repta field in Bossier Parish, northwestern Louisiana, flowed at the rate of 146 bbl. of condensate per day plus 760 M.c.f. of gas from perforations at 9,312-19 ft. opposite the Ardis sand of the Cotton Valley. Stratofrac was used at the well. Crews plan to restratofrac.

SOUTH LOUISIANA

Oil Production Proved In Baton Rouge Wildcat

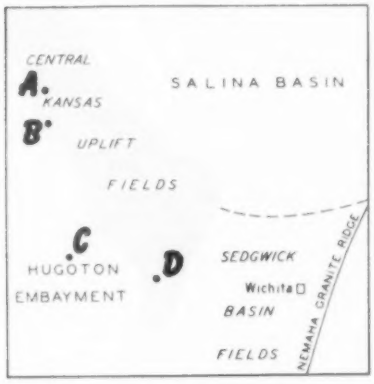
Atlantic Refining Co. has opened a new oil field, located 2 miles south of Baton Rouge, in East Baton Rouge Parish, with the successful completion of its 1-A Morgan, producing from a Frio sand, opposite which casing is perforated at 10,054-60 ft. On potential test through ½-in. choke, the well flowed 80 bbl. of 49°-gravity oil per day with some water, about 16 per cent of the total fluid. Tubing pressure gaged 70 psi.

Hole was drilled to 10,406 ft. by James Snowden. Atlantic took it over, cleaned out and cemented pipe to 10,403 ft. Initial tests with casing perforated at 10,214-220 ft. got water. Some oil with water was recovered from casing perforations at 10,162-172 ft., after which hole was plugged back to 10,115 ft. for the completion.

KANSAS

Central Kansas Uplift Continues Active Program

Jones, Shelburne & Farmer have casing set at a possible Graham County discovery at 1 Montgomery, NW NW NE 8-8s-23w, wildcat 1¼ miles northeast of Gettysburg pool and 3 miles west of Hill City in the central



part of the county. (A on map). A drill-stem test in Lansing at 3,657-71 ft. recovered 180 ft. of gas, 55 ft. free oil and 10 ft. heavily oil-cut mud. Recovery on a second test at 3,672-3,701 ft. was 5 ft. heavily oil-cut mud.

A new Trego County discovery (B on map) is going on the pump after swabbing 57½ bbl. of oil per hour. The new discovery is Imperial Drilling Co.'s 1 Walker, SW NE SW 4-11s-23w, wildcat 2½ miles northwest of Wakeeney pool in the northern part of the county. The recovery came after acid treatment of perforations at 3,692-97 ft. in the Lansing and at 3,561-68 ft.

Pratt County on the southern end of the uplift at D on map has a flowing discovery at Champlin Refining Co.'s 1 Henderson, SW NE NW 11-26s-14w, 1 mile southwest of Moore pool and 5 miles northwest of Chance pool in the northern part of Pratt. A rock fracture treatment gave 7½ bbl. of oil per hour for 36 hours plus 1,000 M.c.f. of gas from the Kinderhook. A good show of oil was noted in the Lansing, also. Casing was set to 4,302 ft., Kinderhook topped at 4,246 ft. Perforations were made at 4,246-52 ft.

Rank Hodgeman Discovery

The rank wildcat area of the Hugoton embayment of southwestern Kansas has a new indicated discovery (C on map).

Atlantic Refining Co. is putting 1 Hall, C NW SE 36-23s-22w, on the pump after swabbing 53 bbl. of oil per hour and no water for 3 hours. The wildcat is located 14 miles east of Purdyville pool in Hodgeman County. Production is from Marmaton at 4,437-43 ft. and 4,284-95 ft.

The new Pennsylvanian discovery is located in the sparsely productive Hugoton embayment in the area between the Las Animas arch of eastern Colorado, and the Central Kansas uplift, and is the northerly extension of the Anadarko basin.

Discoveries Completed

Central Kansas uplift . . . Four new pools have been opened on the Central Kansas uplift. In Ellis County Derby Oil Co. finaled 1 McCombs, SE SE SW 11-11s-17w, opening Turkville pool with a pump potential of 52 bbl. of oil daily from the Arbuckle. Graham County has two new pools. Peel-Hardman Oil Producers finished 1 Cooley, NE NE SE 7-9s-21w, with pump potential of 386 bbl. of oil daily from the Arbuckle, while Harry Gore and Stanolind Oil & Gas Co. opened White Southwest pool at 1 Lewis, NW SE NE 35-10s-21w, for 729 bbl. of oil per day on the pump. Shepherd South pool has been

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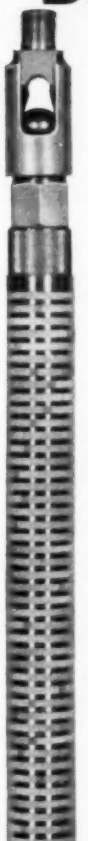

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opened in Stafford County at Ed Adair and Ray Fleming 2 Sleeper, SW SE NW 21-22s-11w, for a pump potential of 198 bbl. of oil daily from the Arbuckle.

Southern Kansas . . . Cowley County in southern Kansas has two new pools. The Texas Co. opened Burden East pool at 1 Jarvis, NW SW NW 33-31s-6e, for 80 bbl. of oil daily from the Stalnaker. Laura Jane Oil Co. has a new pool at 1 Allen, SW SW NW 12-33s-3e, finished for 25 bbl. of oil per day from the Bartlesville on the pump.

Salina basin . . . Marion and McPherson counties each has a new oil pool, Durham in Marion, Lively in McPherson. Anderson-Prichard Oil Corp. completed 1 Scully "A," SE NW NW 34-18s-2e, for 202 bbl. of oil daily from the Viola to open Durham. Lively pool was opened in McPherson with the completion of National Associated Petroleum Corp.'s 1 Lively, NE SE NE 28-19s-2w, flowing 273 bbl. of oil daily.

Hugoton embayment . . . Kismet East pool is a new gas area in Meade County. Columbian Fuel Corp. finaled 1 Wheatley, C NW NW 30-33s-30w, with a gas deliverability of 5,000 M.c.f. per day.

ARKANSAS

Hibank Development Up

The new segment of Hibank field in Union County, which now has 12 oil wells producing from the Hogg, Tuscaloosa, Graves, and Meakin sands, has a steady development program under way.

McAlester Fuel Co. has added one new oiler to the area and staked locations for two new tests. The older part of the field lies to the southeast of this new producing area and has production from the Nacatoch sand.

KENTUCKY

EASTERN KENTUCKY

In Jackson County 19-M-68, Price Fraley has completed his wildcat 1 L. H. Sparks, 1½ miles NW of Wind Cave. Has a dry hole at a total depth of 948 ft. Significant markers were Big lime at 230 ft. and Corniferous at 875 ft. No shows were reported.

In Lee County an attempted extension to Ida May Pool ended in failure as Price Fraley's No. 1 Dickinson was dry at a total depth of 948 ft. The prospective producing horizon —the Corniferous lime was topped at 880 ft. but had no shows to total depth.

APPALACHIAN AREA

OHIO

Two short extensions to Mt. Zion pool by outside locations were completed during the week, both in Jackson Township, Knox County. Along the south edge the Mutual 2 E. E. Harris, Section 24, logged the Clinton at 3,000-3,027 ft. with a fairly good showing of oil that increased to 150 bbl. daily after Hydrafrac; in the southwest corner, National Gas 1 W. R. Jewell, Section 25, increased a good showing of oil in sand at 2,905-2,956 ft. to 230 bbl. daily.

Swingle Oil & Gas Co. has probably found a new gas pool ½ mile north of Roberts pool in Newton Township, Muskingum County. Their 1 Raymond Smith, Section 23, gaged

1,350,000 cu. ft. natural and 4,100,000 cu. ft. with a spray of oil after Hydrafrac. Rock pressure is 1,300 psi.

OKLAHOMA

Reperforation Due at Garfield Discovery

Toklan Production Co. will reperforate 1 Blaser, SW SW NE 17-23n-4w, Garfield County discovery more than a mile south of Northeast Prairie Valley pool. The well previously swabbed 7½ to 8 bbl. of oil per hour from perforations at 6,108-15 ft. in the Marshall sand. A drill-stem test of the Mississippi at 5,460-70 ft. flowed an estimated 600 M.c.f. of gas with some distillate, while a test at 5,470-5,521 ft. flowed 500 M.c.f. of gas and recovered 270 ft. heavily gas-cut mud.

George Deck et al 1 Welty, on the west flank of Northeast Prairie Valley pool in the SW NE SW Section 5 flowed 120 bbl. of oil per day from the Marshall at 6,158-64 ft. and 4,000 M.c.f. of gas from the Mississippi. Murray Drilling Co. is running a drill-stem test at 2 Cogswell heirs in the NE SE NW Section 5, while R. W. Simpson, Jr., and W. W. McClure 1 Volen, SW SE SE Section 5, is drilling below 5,685 ft. In the NE NE NE of Section 7 W. C. McBride and Portable Drilling Co. 1 Mae McPherson bailed about 1 bbl. of water per hour with some oil and gas from the lower Marshall. Operators intend to squeeze and perforate in the upper Marshall.

New Pool in Purdy Area Of Garvin County Seen

A new oil pool in the Purdy area of Garvin County, southern Oklahoma, is promised at Vickers Petroleum Co. 1 Crawford, NE NE 31-3n-3w. A drill-stem test of perforations at 9,648-80 ft. flowed gas in 1 hour and 50 minutes. Recovery was 3,500 ft. of oil and 180 ft. of mud. Springer sand was topped at 9,421 ft. This possible new pool is located 2 miles south of East Purdy, a rapidly expanding oil pool, and 1½ miles west of Southwest Panther Creek pool. It is located 1 mile north of Southeast Purdy, a one-well pool.

New Cimarron Test

In far northwestern Oklahoma's Panhandle area Terminal Facilities, Inc., is drilling 1-C Ferguson, SE SE NW 35-5n-9eCM, Cimarron County. The 4,700-ft. test is 3 miles south and east of Cities Service Oil Co.'s 1 Melton, SW SW NE Section 15, which gaged 5,500 M.c.f. of gas per day at 4,516-36 ft. Elsewhere in the immediate area Cities Service is drilling 1-B Ferguson in the SE SE NW Section 13 and the 1-A Sparkman, SE SE NW Section 10.

New Discovery in Garvin Is Significant Pool Opener

Cities Service Oil Co. has an excellent discovery at 1 Hughes "B," C NW SE 27-4n-4w, about 2 miles northwest of the nearest Springer production in Garvin County, southern Oklahoma.

The well flowed at the rate of about 1,300 bbl. of oil per day from perforations in the Hart and Springer sandstones, giving Oklahoma one of the most significant new pools in several months. On initial test the well flowed 1,006 bbl. of 38.5°-gravity oil in 19 hours from perforations opposite the Hart sandstone from 8,347-57 ft. and from 8,392-8,406 ft., and opposite the Springer sand from 9,007-35 ft. Test was made through a ¾-in. choke. Total depth of the discovery is 9,700 ft.

New Beaver Discovery

Oklahoma's Panhandle has a new indicated gas-distillary discovery at Carter Oil Co.'s 1 Kinnamon, C SE NE 23-5n-23eCM, Beaver County.

The well flowed 2,900 M.c.f. of gas per day with acid water from Chester perforations at 6,486-6,510 ft. The well flowed 2,500 M.c.f. of gas per day with a spray of distillate when during a 4-hour shut-in period the pressure increased from 1,250 to 1,700 psi. Carter is continuing tests at the indicated strike.

Testing Under Way at Third Well In Northwest Edmond

The third well in the new Northwest Edmond area of Oklahoma County, is testing a large volume of gas in the Simpson dolomite at 6,256-98 ft.

Calvert Drilling Co. 1 Boling "A," SE SW SE 12-14n-4w, flowed gas in 15 minutes at 200 M.c.f. per day. Recovery on a drill-stem test was 180 ft. of gas-cut mud. A drill-stem test at 6,300-50 ft. in the Wilcox flowed gas in 1½ minutes at 15,000 to 20,000 M.c.f. per day with 50 ft. of distillate being recovered.

The new pool was opened in April at Calvert Drilling Co. and Huffman & Malloy et al 1 Salisbury, SW SE NE 13-14n-4w. The

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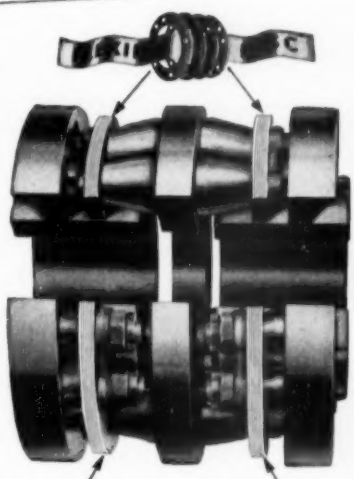

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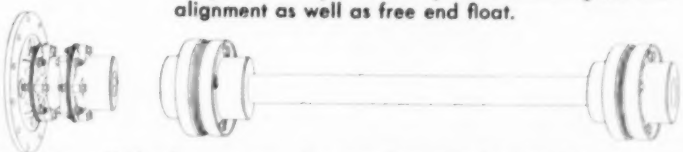

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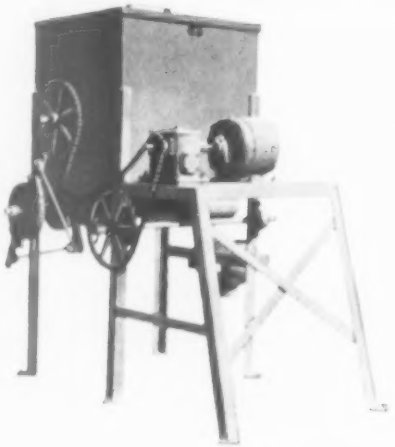

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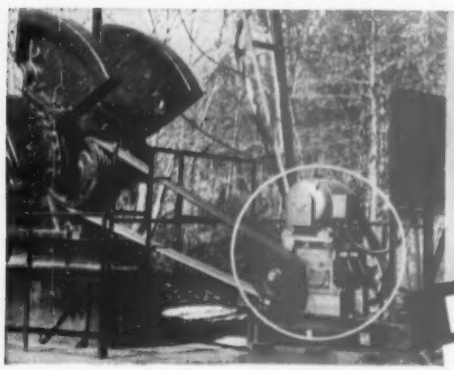

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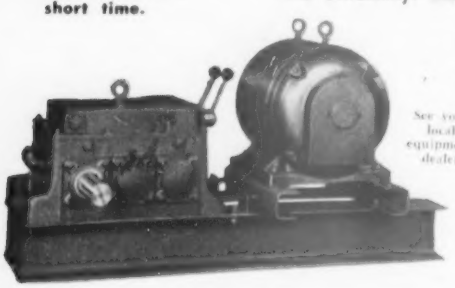

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TEXAS

WEST TEXAS

Extension Well Adds Ellenburger as New Pay

Phillips Petroleum 2-CC University, (formerly 1-RR), gave Northeast Andrews pool its second pay, in the Ellenburger. Completion potential was 1,259 bbl. of oil from open hole at 13,828-53 ft., through ¾-in. choke. Top of the Ellenburger was 13,848 ft. on elevation of 3,051 ft.

Second potential, in the discovery horizon, was 384 bbl. of oil a day through ½-in. choke from perforations in the Devonian at 12,530-90 ft. Top of the Devonian at 12,450 ft. checked 120 ft. high to the same marker in Phillips 1-CC University, discovery well of the pool.

New pay at Triple N... Gulf Oil Corp. 1-AR State, east of Ellenburger production in this prolific pool of southern Andrews County, flowed 224 bbl. of oil in 18 hours on a drill-stem test of Judkins (Permian), limestone at 5,470-5,550 ft., and in another test tanked 155 bbl. of oil in 6 hours. Operators were running tubing for production tests.

New exploration... Central Andrews County gained an Ellenburger wildcat at The Texas Co. 1-H Parker, 1¾ miles northwest of Andrews in 15-A46-PSL. Location is within the trend of Permian fields. Projected depth is 13,500 ft.

Texaco also staked location for 1 J. E. Mabee, 12,400-ft. Devonian test in 32-39-T3N-G&MMB&A, near the Martin County line and about 4½ miles east of Magnolia Petroleum Co.'s Devonian discovery of the Hutex pool.

EAST TEXAS

Second Smackover Test For Franklin County

Humble Oil & Refining Co. will try for Smackover limestone production in southern Franklin County 4 miles north of Winsboro and northeast of Bacon limestone wells in the Southeast Pickton field of Hopkins County.

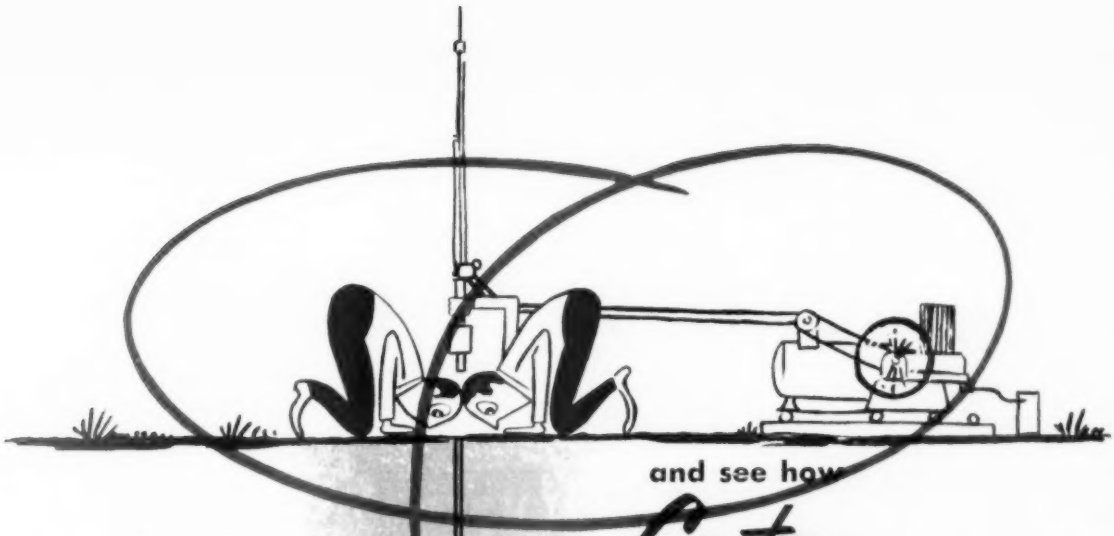
The new project will be 1 A. C. Ballard, located in the J. L. Elder Survey, A-155. Projected depth was 14,500 ft.

Tide Water Associated Oil Co. et al 1 Ramey Unit, Smackover test in the New Hope field, northeast of Humble's proposed location, was drilling lime and shale at 8,452 ft. on a 13,000-ft. contract. Top of the Travis Peak was reported at 7,980 ft.

TEXAS GULF COAST

Extension Gasser Opens New Pay at North Delhi

A new gas condensate pay zone for the North Delhi area in western Harris County has been opened by F. A. Callery at his 2 Tucker, completed with an open flow potential of 36,000,000 cu. ft. of gas daily from casing perforations at 6,482-86 ft. Gas-condensate ratio was 36,000 cu. ft. per barrel. Gravity of the condensate was 66.3°. The well previously had been completed in a



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deeper pay at 6,782-95 ft. (casing perforations), from which it flowed 97.28 bbl. of 40.4°-gravity oil per day through 7/64-in. choke. Location is a quarter mile north of the present most northerly production in the area.

Oil Production Opened in New Wharton County Area

Texas State Drilling Co. has opened a new oil-producing area in Wharton County, where its 1 Hall, 3 miles southwest of El Campo, in the J. B. Morford Survey, Section 12, flowed 118.25 bbl. of 41°-gravity oil in 24 hours through 7/64-in. choke from sand, opposite which casing is perforated at 6,276-82 ft. The well had a tubing pressure of 800 psi. and a gas-oil ratio of 650 cu. ft. per barrel. Location is 2 miles north of the East Hillje discovery well, which produces from sand at 6,166-69 ft.

Two Confirmation Tests Started for Bender Area

Development of the new Yegua producing area opened by Sinclair Oil & Gas Co. in southern Montgomery County is getting under way with locations already made for two confirmation attempts, one about 1,100 ft. north and a little west of the discovery well, and the other an east offset to the discovery well. Both will be drilled by Sinclair.

The new area, located north of the town of Rayford, about 5 miles southwest of the Conroe field and about 2½ miles northnortheast of the Kuhlman field, in northern Harris County, has been designated as the Bender field. The discovery well, Sinclair Oil & Gas Co. 1 Bender, completed late in April, flowed 175 bbl. of 35.3°-gravity oil in 24 hours through 10/64-in. choke during its potential test. Its Yegua pay is open through casing perforations at 6,076-78 ft.

Location northwest of the discovery well is on the same lease and will be carried as 2 Bender. The east offset is 1 Lawndale. All three wells are in the Montgomery County School Land Survey, Abstract 350.

Potential Tests Verify East Bernard Discovery

Potential tests run the past week at Tide Water Associated Oil Co.'s discovery well, 1 Boettcher, a mile west of East Bernard, in Wharton County, have verified earlier indications of production. In the tests, the well flowed at the rate of 3,800,000 cu. ft. of gas per day through open tubing with a ratio of 43,900 cu. ft. of gas per barrel of 59.5°-gravity condensate. The well was brought in early this year but has been shut in ungaged since then. Production is from Yegua sand, open through casing perforations at 7,554-80 ft.

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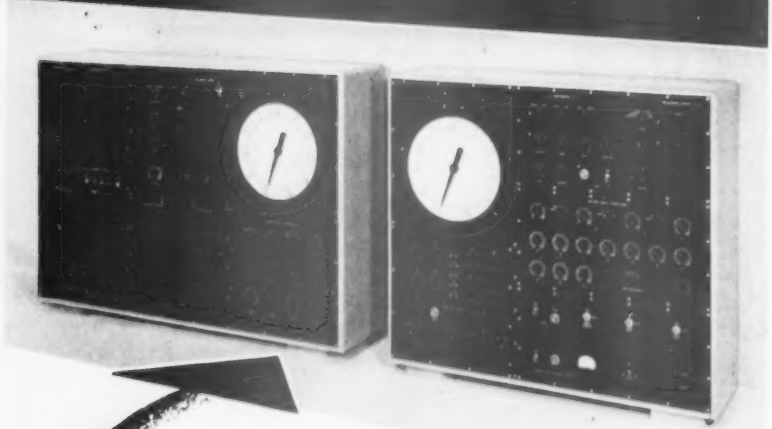

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MICHIGAN

Mecosta Wildcat Heads Current Drilling List

Top Michigan wildcat drilling well during the current period was the C. W. Collin & Granville C. Berlin 1 Mecosta Lakes Co. et al, SW SW SE 17-14n-8w, Morton Township, Mecosta County.

Well showed for an estimated 1,500,000 to 3,000,000 cu. ft. of gas a day on drill-stem test in the Michigan Stray sand. Best calculated gage, on the basis of the drill-stem test information, however, was 1,156,000 cu. ft. of gas a day. Top of Stray sand was logged at 1,320 ft. With hole drilled to 1,330 ft., and with packer set at 1,260 ft., the drill-stem test was run for 50 minutes. Gas showed in one minute. Bottom-hole pressure was gaged at 512 psi., with a reported back pressure of 180 lb. on the testing tool. After being shut in for five minutes, rock pressure was reported at 475 psi.

This wildcat, scheduled to be drilled to the Traverse and Dundee as an oil test, was drilled ahead after running the test in the Stray sand and was cased with 7-in. through the Marshall at 1,625 ft. The Stray section may be reopened and retested if well fails to pay off in the oil objectives. One of the most interesting and possibly most significant points about the gas-showing Stray section at this well is the relationship between the well, both in its location and its structural relationship to the Austin Field Gas Storage Reservoir in Austin Township, Mecosta County, where Michigan Consolidated Gas Co. is storing Texas gas for withdrawal in the peak winter load months to supply Michigan markets. Although it has not been definitely determined that this well is in an area that could connect with the Austin reservoir, it is believed that stored gas from the field could be migrating as far east as this wildcat. It is also possible that the Collin-Berlin wildcat is on a separate closure than Austin pool, but most engineers and geologists, at this time, consider the former more likely than the latter.

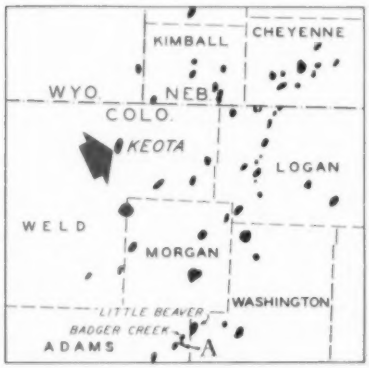
ROCKY MOUNTAIN

COLORADO

Denver-Julesburg Permian Discovery Reports Gage

Sherrod & Apperson, Tulsa independents, have reported a pump gage of 279 bbl. of oil daily at 8 Gillette, C NW NW 9-9n-61w in Keota field, Weld County, the first producer from pre-Cretaceous horizons in the Denver-Julesburg basin. Production was found in Lyons sand of Permian age in the interval 18,476-96 ft.

The 279 bbl. per day test was not considered conclusive by the operator due to partial equipment malfunction, and the well is definitely expected to complete in the 250-300 BOPD range.



Arrow indicates Keota field in Weld County, Colorado, where Sherrod & Apperson's 8 Gillette, C NW NW 9-9n-61w, reported a pump gage of 279 bbl. of oil per day from the Lyons sand of Permian age. This discovery is the first commercial pre-Cretaceous production in the Denver-Julesburg basin. At A on map Triangle J Oil Co. recovered apparently commercial quantities of oil on drill-stem test of the "D" sand at 1 Morris, about 2 miles southwest of new Badger Creek pool. The indicated discovery adds to the importance of the Washington-Adams County area, where Little Beaver field has become one of the basin's prolific producing areas.

Deeper drilling through the basin has been spurred by the Lyons discovery in Keota field. Sherrod & Apperson have already staked a confirmation effort to the discovery well in the same area, and several other deep tests are under way. South of the discovery Eisenhower Drilling Co. tested Lyons at 1 Niles, C SW SE 13-6n-61w, with recovery of 1,920 ft. of water from an undisclosed interval. The operator will core ahead to Lower Permian zones.

Sherrod & Apperson are also testing a second new pay discovery for the Denver-Julesburg basin at 1 Endsley, NW NW NE 6-3n-60w, Morgan County. This well found oil in Greenhorn, not previously known to produce in the basin. Early tests showed a pump gage of approximately 5 bbl. of oil per hour, with tests continuing.

Denver Basin Production Extended Southward

Triangle J Oil Co. has tested an apparent "D" sand discovery 2 miles southwest of the recent Badger Creek discovery in Adams County. The well, 1 Morris, NE NE SW 27-2s-57w, is southwest of production on the Little Beaver-Badger Creek trend, which is presently the most active area in the Denver-Julesburg basin. On test of the interval 5,393-5,405 ft. the recovery was 550 ft. of oil and 95 ft. of oil and gas-cut water under flowing pressure of 240 psi. Tool was open for 1 hour. The tested interval contained a 9½ ft. saturated sand section. A later core from 5,405-45 ft. included 10 ft. of similarly saturated sand, and tests of this section have not been run.

Western Colorado Gas Discovery Completed

Frontier Refining Co. of Cheyenne reported a gage of 15,200,000 cu. ft. per day from the Dakota interval 2,838-2,880 ft. at the 1 Unit, C NW NW 31-8s-104w, Mesa County. The wildcat is the second to be drilled in the unit, which includes both Colorado and Utah acreage. The previous test, west of the current discovery produced gas from Morrison-Entrada. These zones were not productive in the present wildcat, and it was plugged back from a total depth of 3,550 ft. completion in Dakota. Gage through ¾-in. choke was 8,500 M.c.f. per day.

UTAH

Duchesne Test Flows

Carter Oil has tested a flow of 56 bbl. of oil per hour at 1 Duchesne County, C SE NW 25-3s-5w (USM), Duchesne County. The well flowed at an estimated rate of 177 BOPH on test of the upper Green River zone from 5,126-5,225 ft. The currently reported test was made after casing was landed at 5,123 ft. and was through 1 in. choke. The well is of importance as the first apparently commercial discovery in the upper part of the Green River formation within the Uinta basin. Its low pour point of 25° is in contrast to a majority of production in Utah where high gravity, high pour point oil has been the rule rather than the exception.

*Completion gage of the well is still in doubt. Unofficial reports, not confirmed by the operator indicate that some water was recovered with the oil on the most recent series of tests.

WYOMING

Park County Wildcat is Apparent Frontier Discovery

Sun Oil Co. has tested apparently commercial quantities of oil from Third Frontier at 1 State, C NE NW 16-56n-101w, Park County, south of Badger Basin field.

On test of the interval 10,021-55 ft. and with tool open 3 hours recovery was 1,000 ft. water cushion, 50 ft. of mud, and 2,550 ft. of 49.2°-gravity light amber oil. There was gas at the surface in 30 seconds with blow increasing from light to hard during the test. Flowing pressure was 550-920 psi.

The wildcat was scheduled as a 13,000-ft. test to Madison, and was located after considerable seismic work through the area. The operator is reported coring 10,055 ft., and no decision as to whether the well might be completed short of the original objective has been announced. It will be continued deep enough to test Dakota which is productive at Badger Basin, about 6 miles north. Phosphoria and Tensleep, both good pro-

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ducers through the Big Horn basin may also be tested.

The California Co. 1 Unit, SW SE NW 27-53n-100w, in The Corbett area, Park County, topped Phosphoria at 10,004 ft. and on test from 10,396-467 ft., possibly in upper Tensleep, recovery was 120 ft. of 40°-gravity green oil, with about 500 ft. of drilling fluid in 5½ hours. The operator is running another drill-stem test with total depth 10,547 ft. Despite the uncertain commercial value of the test the wildcat is of considerable interest due to its location about 6 miles north of North Oregon Basin field. It is also a seismic prospect, and was scheduled as a test to Madison.

Manderson Area Wildcat Discovery Completed

Gulf Oil Co. has completed 1 Thomas, NE SE 33-50n-92w, discovery south of production in the Manderson unit, and outside the unit area for a gage of 807 bbl. of oil daily from Prosphoria between 7,088-7,160 ft. The well is one of the largest recent producers in Wyoming and is significant as a considerable southwestward extension of production in the area. A confirmation well will be drilled by Gulf at 1 Smith, C NE NW 34-50n-92w.

Drilling in the area has not been sufficient to determine whether the Gulf well is on a separate feature as it is now rated, or whether it is an extension of the producing structure within the unit area proper.

MONTANA

Shell Oil Co. recovered 1,478 ft. of gassy oil at the 32-11-B, C SW NE 41-12n-56e, Prairie County 3 miles northwest of the Pine Unit. Top of Silurian was at 8,555 ft. and the test was of the interval 8,843-61 ft. with tool open two and one-half hours. Flowing pressure was 250-575 psi. A later test from 8,869-8,901 ft. made 1,100 ft. of muddy water with 5 per cent oil in bottom. The operator is drilling ahead.

CANADA

Exploration Activity Centered In Alberta

Alberta highlighted western Canada's petroleum exploration during the past 7 day period—as two wildcats were chalked up as oil discoveries—a step-out venture discovered natural gas and was also recorded as an oil extension to a previously discovered oil pool, and a wildcat in the central sector of the province, that had been assured of natural gas production in early March, rated one of the largest open flow potentials in the province.

In southern Alberta, two Calgary-based companies, York Oils, Ltd., and Pathfinder Leaseholds, Ltd., share a wildcat that discovered natural gas in two horizons and medium gravity crude in one zone. The initial gas, at a moderate rate of only 160,000 cu. ft. per day, was found in the Bow Island sands. However, in the Sunburst, which was contacted at 3,442 ft., the well encountered about 25 ft. of gas zone, flowing at rates in excess of 1.6 million cubic feet daily. The oil zone was entered at around 3,467 ft., and some 52 ft. of pay zone was present. One of the drill-stem tests in that horizon, from 3,497 to 3,515 ft., yielded a recovery of 1,200 ft. of clean crude oil, with estimated gravity around 25°.

This tri-discovery well, York-Pathfinder 1 Brooks, LSD 10, 18-19-14w4, is located 145

miles southeast of Calgary, 2 miles north of Brooks town and 70 miles northeast of Lethbridge. Hole was taken down to 3,571 ft., and crew was preparing to run string of production casing at weekend.

Glen Park . . . The other Alberta oil discovery this week, was made in the Glen Park area, just south of the Leduc-Woodbend oil region, and offsetting D3 Devonian oil producers. This strike came in the glauconitic section of the Lower Cretaceous, and gave up a flow of approximate 37°-gravity crude oil.

This find, Homestead 4 Glen Park, LSD 4, 1-49-27w4, indicated approximately 31 ft. of water-free oil zone below the sand contact at 4,610 ft. Crew is currently making hole at around 4,900 ft., heading for its Devonian D2 and D3 objectives.

Southern sector . . . In the southern sector of the province, a key step-out venture, near the towns of Enchant and Retlaw, flowed natural gas at rate in excess of 1,000,000 cu. ft. daily from the Bow Island sand, and during initial test in the Mississippian limestone, gave up a recovery of light gravity crude oil.

This well, owned by Texaco Exploration Co., who had discovered natural gas along with some oil at a site 1¾ miles to the west-northwest, entered the Mississippian at 3,373 ft., or at an elevation 19 ft. lower than the first well—thus eliminating a sizable portion of the gas cap that necessitated completion of the discovery well as a gasser. First test in the limestone at the new success, Texaco B-1 Enchant, LSD 13, 19-13-16w4, was run from 3,362-75 ft. Gas flowed at maximum rate 600,000 cu. ft. daily and one hour recovery was 420 ft. of light gravity oil. Coring and testing is being continued. The Enchant project lies 38 miles northeast of Lethbridge and 100 miles southeast of Calgary.

Kessler area . . . It was learned this week that a natural gas discovery well in the Kessler area, 145 miles northeast of Calgary and 45 miles west of the Saskatchewan border, rated a potential that ranks among the highest in western Canada.

That well, drilled by Mill City, Sharples and Kroy, on farmout lands from Sweetgrass Oils, recently ran back pressure tests, and through perforations in the Viking sand 2,474 to 2,487 ft., showed an absolute open flow potential of 67,000,000 cu. ft. daily. Top of the Viking was entered at 2,474 ft. K. B. elevation 2,380 ft.

The discovery well is Mill City-Sharples-Kroy-Sweetgrass 1 Kessler, LSD 13, 27-38-8w4, 26 miles east of heavy crude oil in the Bulwark area.

WILDCAT COMPLETIONS

SOUTHWEST TEXAS

Atascosa County: American Republics Corp. 1 Wilson, John Gaston Survey, A-314. IP 7,950 M.c.f. daily and 16½ BD per M.M.c.f., open flow, 59.6°, Edwards lime 7,455-71 ft., 7,512-14 ft., and 7,518-23 ft. (casing perforations). TD 7,527 ft.

Alaska Steamship Co. 1 Scott, Captain S. Hagler Survey 268, A-394. Dry. TD 5,700 ft.

Precision Prospecting, Inc., et al 1 Cook, Benjamin Kellogg heirs Survey 1396, A-515. Dry. TD 1,740 ft.

Harris S. Stahl 1 Fujtik, John Neil Survey 1190. Dry. TD 1,789 ft.

Thomas Brothers and Gilcrease Oil Co. 1 Temple S. Malone Survey 1069, A-611. Dry. TD 1,699 ft.

Bell County: Varner-Neill Drilling Co. 1 Baugh, I & GN Survey. Temporarily shutdown. TD 1,024 ft.

Caldwell County: Ellmag Oil Corp. 1 Reed et al, Solomon Seal Survey. IPP 29 BOPD, 24°, Dale lime 2,460-2,510 ft. (open hole). TD 2,735 ft. Elev. 426 ft., Pecan Gap 2,065 ft., Dale lime 2,450 ft., Serpentine 2,490 ft., Austin 2,510 ft., Chalk 2,640 ft., Eagleford 2,695 ft., Buda 2,732 ft.

Duval County: John F. Camp 2 Miller, Diego Ynojosa Grant, A-629. Dry. TD 5,012 ft.

Frio County: Sun Oil Co. 1 Johnson, Frio County School Land Survey, A-308. Dry. TD 4,902 ft.

Jim Hogg County: Humble Oil & Refining Co. 3-D Atwood, San Antonio Viejo Grant, A-327. Dry. TD 5,005 ft.

Southern Minerals Corp. 2-A Silver Lake Ranches, Fowler & Rankin Subdivision. Dry. TD 4,166 ft.

Jim Wells County: San Juan Exploration Co. and Mazda Oil Corp. 1 Rysinger Ranch, San Diego de Abajo Grant. Dry. TD 5,695 ft.

Kenedy County: Humble Oil & Refining Co. 1 Robert Kleberg trustee, San Salvador del Tule Grant. Dry. TD 11,600 ft.

McMullen County: Alaska Steamship Co. and Newman Brothers Drilling Co. 1 Donnell, W. M. Herritage Survey 12, A-1075. Dry. TD 2,391 ft.

San Patricio County: Arkansas Fuel Oil Co. 1-B Guedin, Second Addition to Taft Farm Lands. Dry. TD 8,919 ft.

Starr County: Kirkpatrick-Coates-Vessels 1 Quirano Velma, Santa Teresa Grant. IP 1341 BOPD, 7/64-in., 43.6°, casing perforations 5,813-26 ft. (tubing completion), and 26,000 M.c.f. daily, open flow, casing perforations 5,607-18 ft. (casing completion). TD 5,973 ft. (New pay in North Sun field.)

Oil Operations, Inc., 1-A R. E. Margo estate, Las Comitas Grant, A-178. Dry. TD 5,850 ft.

Webb County: Hawn Brothers et al 1 Nacy

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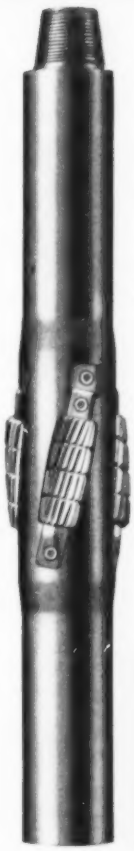

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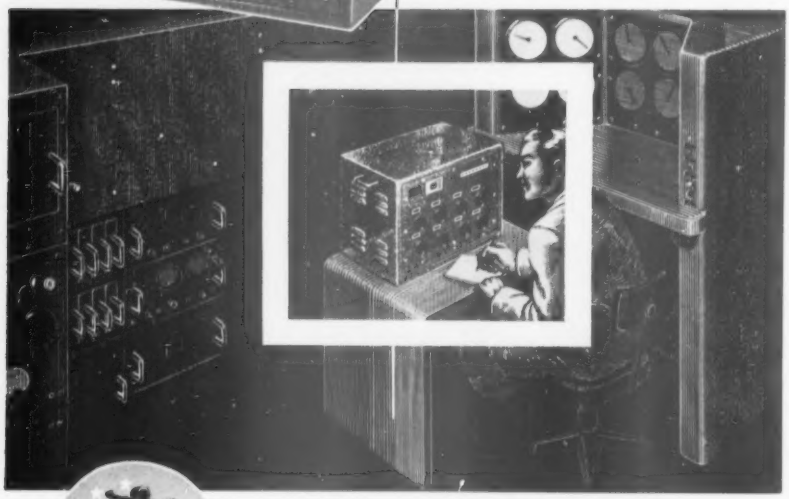

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WILDCAT COMPLETIONS

de Spain, Survey 8, Block 2, A-2209. IPP 42 BOPD, 46°, open hole 2,598½-2,605 ft. TD 2,605 ft. (New field.)

Hawn Brothers et al 2 Nancy de Spain, OCSD & RGNG Survey 8, A-2209. Dry. TD 2,638 ft.

Willacy County: Humble Oil & Refining Co. 2-T Sauz Ranch-Nopal, San Juan de Carricitos Grant. Dry. TD 10,188 ft.

Humble Oil & Refining Co. 7 Sauz Ranch-Tenerias, San Juan de Carricitos Grant. Dry. TD 8,999 ft.

Wilson County: J. C. McCabe et al 1 Fuller, M. Tarin Survey 48, A-331. Dry. TD 1,719 ft.

Zapata County: Killam & Hurd 5 Akin, Borrega Grant. Dry. TD 2,016 ft.

Zavala County: Shell Oil Co. 3 Plumly, GC & SF Survey 3, A-839. IP 2,000 M.c.f. daily, ¼-in., casing perforations 2,127-2,210 ft. TD 3,900 ft.

EAST TEXAS

* Harrison County: American Republics Corp. and Houston Oil Co. of Texas 1 Bosch Estate, Benjamin Parker Sur., A-549. IP 60,000 M.f.g. GOR 377,000 cu. ft., Young zone 6,894-6,901 ft. TD 7,389 ft.

* La Gloria Corp. 1 Frank Thomas, J. B. Campbell Sur., A-148. IP 4,393 M.f.g., 71 BO, 60°, ¾-in., Hill section, lower Pettit, 6,401-09 ft. TD 6,775 ft.

Houston County: Carter-Jones Drilling Co. 2 G. L. Richards, Juan LaRiviere Sur., A-49. Dry. TD 5,978 ft.

Kaufman County: Cooper-Herring 1 Sam Smith Estate, G. W. Daugherty Sur. Dry. TD 3,700 ft. in Woodbine sand.

Marion County: L. A. Grelling 1 H. M. Lawrence, W. W. Lightfood Sur., A-254. Dry. TD 3,830 ft.

Morris County: B. G. Byars 4 Paul Pewitt, G. W. Dyer Sur. Dry. TD 4,838 ft., elev. 284 ft. Woodbine 3,300 ft.

Navarro County: Frank Ware 1 J. L. Jackson, J. Lockhart Sur., A-499. Dry. TD 1,563 ft.

Red River County: Goss Drilling Co. 1 Ben Brooks, B. Gooch Sur. Dry. TD 1,796 ft.

Shelby County: Jack L. Phillips 1 W. H. Jones, T. Kilgore Sur., A-410. Dry. TD 1,525 ft.

Wood County: John C. Robbins Jr. 1 B. F. McCullough, Bailey Martin Sur., A-396. Dry. TD 5,415 ft.

Spence, Wise and Lake 1 R. J. McMillan, John Jones Sur., A-330. Dry. TD 4,971 ft.

PANHANDLE

Motley County: Lion Oil Co. 1 Shoenail, 212-S5-D&P. Dry. TD 8,010 ft., elev. 2,205 ft., Wolfcamp 3,512 ft., Pennsylvanian 5,895 ft., Strawn 6,150 ft., Chester 7,710 ft. TD in Mississippian.

TEXAS GULF COAST

Brazoria County: Dan J. Harrison, Jr., 8 Groce, T. Alsberry Survey. Dry. TD 8,562 ft.

Humble Oil & Refining Co. 1 West Manvel Gas Unit 1, HT&B Survey 63, A-28,. Dry. TD 7,500 ft.

Progress Petroleum Co. of Texas 1 Stern, Freeman Pettus Survey, A-114. Dry. TD 10,512 ft.

Calhoun County: Quintana Petroleum Corp. 1 State, Tract 8, Lavaca Bay. Dry. TD 8,679 ft.

DeWitt County: Mebane & Cannan 1 Hex Green, Jr., Dolores Alderete League, A-52. Dry. TD 7,398 ft.

Fayette County: Hamman Oil & Refining Co. and States Marine Co. 1 Terrell, J. McCowan, A-238. Dry. TD 2,525 ft.

WILDCAT COMPLETIONS

E. & H. Phillips 1 Ohnheiser, Richard Smith Survey, A-95. Dry. TD 4,407 ft.

Harris County: Amerada Petroleum Corp. 1 Watkins Unit, WCRR Survey 2, A-1185. IP 5,000 M.c.f. daily, open flow, casing perforations 6,814-18 ft. TD 7,722 ft.

Jackson County: D. D. Harrington 1 Whitley, Isaac Madden Survey, A-47. Dry. TD 7,018 ft.

Hunt Oil Co. 1 Bures, John Davis Survey, A-16. IP 10,500 M.c.f. daily, open flow, Frio, casing perforations 6,481-87 ft. (tubing completion), and 13,200 M.c.f. daily, open flow, Frio, casing perforations 5,731-40 ft. (casing completion). TD 6,550 ft. (Extends Ganado East field.)

N. B. Hunt 1 Hollingsworth, Eli Mercer Survey, A-54. Dry. TD 4,720 ft.

Jefferson County: Michael T. Halbouty 2 Marrs McLean, P. Humphries Survey. IP 115.05 BOPD, 8/64-in., 25°, Miocene 3,155-61 ft. (casing perforations). TD 4,873 ft. (New pay in Spindletop field.)

Karnes County: San G. Harrison 1 Della Tips et vir, Carlos Martinez Survey, A-6. Dry. TD 8,550 ft.

Liberty County: General Crude Oil Co. 1 McClain, A. Hillhousen Survey, A-208. Dry. TD 7,980 ft.

Live Oak County: Edwin L. Cox 2 McNeil et al, M. M. Shipp Survey 344-A. Dry. TD 4,450 ft.

Harris S. Stahl 1 Breiten, Owen Gafney Survey 65, A-186. Dry. TD 3,696 ft.

Refugio County: C. G. Glasscock and Humble Oil & Refining Co. 1 State, Tract 19, Copana Bay. Dry. TD 7,510 ft.

Wharton County: Warren Petroleum Corp. 1 Stovall, P. B. Norton Survey, A-313. IP 1,109 M.c.f. daily, casing perforations 3,026-29 ft. TD 5,125 ft. (New pay in Trans Tex field.)

WEST CENTRAL TEXAS

* Brown County: T. A. Peterson 1 W. T. Wright, Stephens Jones Sur. 282. IPP 166 BOPD, 43°, pay 1,377 ft. TD 1,433 ft.

* T. A. Peterson 2 Wright, Stephens Jones Sur. 282. IPP 152 BOPD, pay 1,376-79 ft. TD 1,415 ft.

Rogers & Thomas 1 E. M. Kennedy, Sec. 26, BBBC Sur. Dry. TD 1,065 ft.

L. H. White 1 Walter Fry, Kerr CSL, Blk. 43. Dry. TD 953 ft.

Sloan Wells 1 Otto Leatherwood, Blk. 18, San Juan Delgado Sur. 789. Dry. TD 1,212 ft.

Callahan County: Johnson & Warren 1 Mrs. Josie Brown, Ogilvy Sur. Dry. TD 1,052 ft.

* Johnson & Warren 1 McAnally, J. H. Pickens Sur. 221. IP 85.8 BOPD, 16/64-in., 39°, pay 1,832 ft. TD 1,835 ft.

Coleman County: W. J. Murray and J. L. Collins & Co. 1 Ella Lowe, O. M. Keith Sur. 165. Dry. TD 2,190 ft.

Roark, Hooker & Roark 1 C. Croom, 36-2-GH&H. Dry. TD 3,510 ft.

Rhodes & Sullivan 1 J. P. McCord, Sec. 159, J. W. Meek Sur. Dry. TD 3,975 ft.

Fisher County: Seaboard Oil Co. of Delaware 1 Ralph Collins, 48-Y-T&P. Dry. TD 7,050 ft.

Twin Oil Corp. 2 Orpha Terry, Sec. 262, H&TC. Dry. TD 6,052 ft., elev. 2,148 ft., Strawn lime 6,004 ft.

Haskell County: E. B. Fletcher 1 H. N. Warren, 10-1-H&TC. Dry. TD 4,635 ft., reef 3,020 ft.

Jones County: Carr, Moncrief, Groover and McMordie 2 Davis Estate, F. M. Smith Sur. 3. Dry. TD 1,719 ft.

J. D. Coombs 1 Mrs. O. E. Rosenquist, Sec. 166, BBB&C Sur. Dry. TD 3,410 ft.

John E. Taylor 1 M. Ward, Sec. 48, OAL Sur. Dry. TD 2,631 ft.

Nolan County: Sun Oil Co. 4 E. Parramore, 45-1A-H&TC. Dry. TD 7,221 ft., elev. 2,499 ft., Caddo 6,824 ft., Strawn 7,055 ft., Ellenburger 7,178 ft.

* Stonewall County: Neeld & Hood Drilling Co. 1 Minor Alexander, Sec. 1, W. Vardeman Sur. 347. IP 168 BOPD, 8/64-in., 42°, Strawn sand 4,724-33 ft. TD 4,786 ft.

Taylor County: American Liberty Oil Co. 1-B Tittle, 41-19-TUP. Dry. TD 5,697 ft.

H. Bryan Poff 1 John Bull, Sec. 456, J. Walker Sur. Dry. TD 4,552 ft.

Southern Minerals Corp. 1 French Robertson, Hood CSL 94. Dry. TD 3,960 ft.

NORTH TEXAS

Archer County: Archer Drilling & Production Co. 1 Horky, Blk. 37, Meads LM Subd. Dry. TD 1,491 ft.

Archer Drilling & Production 1 Scholl, J. Ruddell Sur., A-355. Dry. TD 936 ft.

Archer Drilling & Production 2 Scholl, 300 ft. W No. 1. Dry. TD 991 ft.

Archer Drilling & Production 3 Scholl, 300 ft. N No. 1. Dry. TD 1,048 ft.

G & R Drilling Co. 1 J. Rater, Blk. 2, IRR Sur., A-851. Dry. TD 715 ft.

W. F. Holmes 1 Guy Baggett, G. W. Dugan Sur., A-1050. Dry. TD 1,354 ft.

* Morgan Bros. 3-I Turbeville, A. C. Cassidy Sur., A-1289. IPP 126 BOPD, pay 1,434 ft. TD 1,444 ft.

Harold Shappell 1 H. T. Haile, Blk. 2419, TE&L Sur. Dry. TD 1,341 ft.

Clay County: Less & Coyle 1 W. C. Russell, Blk. 23, Hopkins CSL. Dry. TD 3,702 ft.

Mid-Continent Petroleum Corp. 1 Daniel Henry, Blk. 11, Grayson CSL. Dry. TD 6,210 ft., Caddo 5,867 ft.

P-M Drilling Co. and Elm Oil Co. 1 J. G. King, Blk. 1 J. H. Belcher Subd. Dry. TD 4,709 ft.

Grayson County: Howell, Holloway and Howell 1 I. E. Vanney, W. Fisher Sur., A-416. Dry. TD 4,640 ft.

* Knox County: Yeatman Drilling Co. 5 Davis, Blk. 3, D. G. Burnett Sur., A-20. IPP 27 BOPD, 33°, Strawn sand 4,901 ft. TD 5,205 ft.

Montague County: Blackwell Oil & Gas Co. 1 B. C. Rich, J. H. Bostick Sur., A-66. Dry. TD 5,855 ft.

A. H. Bruner 1 B. W. McLaughlin, F. Escobar Sur., A-216. Dry. TD 3,004 ft.

Cox Drilling Co. 1 Faye Ruth Shaw, Sec. 20, Limestone CSL. Dry. TD 6,603 ft., elev. 932 ft., Barnett 6,331 ft.

Martin Properties 1 Lee Crenshaw, W. Wallace Sur., A-834. Dry. TD 5,824 ft.

* Wichita County: Luke Grace Drilling Co. 1 W. J. House, 2-2-Denton CSL. IP 107.5 BO in 3 hours, 16/64-in., 42°, sand pay 4,704 ft. TD 4,803 ft.

Fred H. Kiel 1 W. T. Waggoner, 33-5-H&TC. Dry. TD 438 ft.

Young County: Bolin Oil Co. 1 B. H. Lawrence, TE&L Sur. 2718, A-1150. Dry. TD 5,461 ft.

D. H. Bolin 1 Nettie Burdick, TE&L Sur. 2713, A-1145. Dry. TD 4,065 ft.

Consolidated Oil Co. 1 Mrs. Lebie Vick, P. R. Splane, Sur., A-259. Dry. TD 3,610 ft.

WEST TEXAS

Andrews County: Woodwar & Fair 1 Bettie Cox, 9-A33-PSL. Dry. TD 12,865 ft., elev. 3,285 ft., Mississippian 10,055 ft., Devonian 10,750 ft., Simpson 12,480 ft., Ellenburger 12,785 ft.

Coke County: Diamond Drilling Co. 1 Mrs. Ruth G. Featherston, 184-2-H&TC. Dry. TD 6,715 ft., reef 6,230 ft.

Sun Oil Co. 1 Mrs. Mattie Jacobs, 325-1A-H&TC. Dry. TD 6,757 ft., elev. 2,114 ft., reef 6,510 ft., Caddo 6,707 ft.

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WILDCAT COMPLETIONS

Concho County: James K. Anderson 1 Wilson, Thomas Green Sur. 1. Dry. TD 2,198 ft.

Gaines County: Bay Petroleum Corp. 1 Z. M. Russell, 17-A24-PSL. Dry. TD 7,560 ft.

* Forest Oil Corp. 1-A Jones, 10-A7-PSL. IPP 221 BOPD, 41°, Devonian 11,258 ft. TD 11,301 ft.

Howard County: Delhi Oil Corp. 1 Sarah M. Hamlin, 17-32-T&P. TD 8,688 ft., elev. 2,727 ft., Spraberry 6,124 ft., reef 8,672 ft.

Motley County: Lion Oil Co. 1 Shoe-Nail, 212-S5-D&PRR. Dry. TD 8,010 ft., elev. 2,205 ft., Wolfcamp 3,030 ft., Mississippian 7,710 ft.

Pecos County: M. J. Stice 1 Stice-McDonald, 6-F-TCRR. Dry. TD 1,570 ft.

* Runnels County: Humble Oil & Refining Co. 1 John L. Barron, R. Clever Sur. 521. IP 138 BOPD, 16/64-in., 43°, pay 3,668 ft. TD 3,682 ft.

Robert King & Ford et al 1 Huffines, Sec. 521, Robert Clever Sur., A-77. Dry. TD 4,451 ft.

Rowan Drilling Co. 1 Lee Parks, Joseph Warner Sur. 418. Dry. TD 4,780 ft., elev. 1,815 ft., Ellenburger 4,696 ft.

Scurry County: Bond Oil Co. and Curtis Inman 1 Clawson, 538-97-H&TC. Dry. TD 3,211 ft.

* Terry County: Joseph I. O'Niell Jr. 1 Mrs. Ella Covington, 21-D14-C&M. IPP 154 BOPD, 31°, pay 5,967 ft. TD 5,981 ft.

Joseph I. O'Niell Jr. 1 E. Hays Sieber, 13-D14-C&MRR. Dry. TD 6,914 ft.

SOUTHEAST NEW MEXICO

Lea County: J. H. Elder 1 V. P. Sheldon, 5-21s-34e. Dry. TD 3,950 ft.

Marlowe Oil Co. and Oceanic Oil Co. 1 State, 9-17s-35e. Dry. TD 5,160 ft.

Roosevelt County: Signal Oil & Gas Co. 1 Bell-Federal, 33-3s-33e. Dry. TD 7,996 ft., elev. 4,310 ft., Pennsylvanian 7,015 ft., Devonian 7,455 ft., granite wash 7,540 ft.

ILLINOIS

Clay County: National Association 1 Sullivan, SW SW SE 3-4n-6e. Dry. TD 2,961 ft.

Clinton County: Dittmeier & Eisenstein 1 Frohn, SW NE SE 9-1n-5w. Dry. TD 2,164 ft.

Edgar County: F. Zakowski 1 Sexton, SW NE NW 20-13n-12w. Dry. TD 815 ft.

Jersey County: Hempen Drilling Co. 1 Fuchs, SW SW SW 17-7n-11w. Dry. TD 640 ft.

Lawrence County: E. B. Martindale 1 Brines heirs, NW NW NE 30-2n-13w. Dry. TD 2,170 ft.

Macon County: Sun Oil Co. 1 Fred Johner, NW NW NE 1-15n-1e. Dry. TD 2,239 ft.

Madison County: T. S. Doran 1 Widmer, SW SE SW 5-3n-5w. Dry. TD 2,115 ft.

White County: Felmont Oil Co. 1 Johnston, SW SW SE 11-4s-10e. Dry. TD 3,249 ft.

INDIANA

Clay County: J. Simpson 1 Frances, NE NE NE 9-10n-6w. Dry. TD 1,501 ft.

Dubois County: Milford Burkett 1 Feldmeyer, NW SW SW 3-3s-5w. Dry. TD 995 ft.

Gibson County: V. R. Gallagher 1 Carter, SW NE SE 10-3s-11w. Dry. TD 2,378 ft.

R. Pentozzi 1 McElmore, NE SW NW 31-2s-8w. Dry. TD 1,671 ft.

*Spencer County: Stanoco Oil Co. 1 L. Cooper, NE NE SE 9-7s-6w. IPP 50 BOPD, Tar Springs 915-33 ft. TD 1,006 ft.

Sullivan County: T & H Corp. 1 Wible, NW NW SW 30-8n-10w. Dry. TD 2,060 ft.

Vigo County: Bayer Petroleum Co. 1 Tadlock, NW NW SE 11-11n-10w. Dry. TD 1,951 ft.

Tricon Petroleum Co. 1 Guise, NE NW NE 1-10n-8w. Dry. TD 1,708 ft.

KENTUCKY

Daviess County: George E. Nelson 1 Hite, SE NW SW 7-O-31. Dry. TD 890 ft.

Webster County: H. A. Stevens 1 Sutton, SW NE SW 24-N-24. Dry. TD 1,645 ft.

MICHIGAN

Allegan County: Michigan Oil & Gas Drilling Co. 1 Arndt, NE SE NW 3-3n-13w. Dry. TD 1,669 in Traverse.

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U. S. POOL MAPS

Here are 16 maps of the most active oil areas in the United States. Shows both oil and gas pools.

These maps are lithographed in three colors and give locations and names of both oil and gas fields.

Small scale—Journal page size—they are convenient for ready reference in field or office. Survey lines make easy plotting of new wildcat locations.

Areas Covered: 1) California, 2) Intermontane Basins, 3) Northern Wyoming, 4) Williston Basin, 5) Kansas, 6) Julesburg Basin, 7) Hugoton Area, 8) Oklahoma, 9) North and East Texas, 10) Permian Basin, 11) West Gulf Coast, 12) South Texas, 13) East Gulf Coast, 14) Miss.-La.-Ark., 15) Tri-State Area, 16) Michigan.

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The Oil and Gas Journal

Box 1260 Tulsa 1, Okla.

Hillsdale County: E. Edwin Brehm 1 Scharp, NW NE NW 16-7n-2w. Dry. TD 3,912 ft. below Trenton.

Jackson County: Thumb Drilling Co. A-1 Reed, NE NE NE 24-4s-2w. Dry. TD 1,521 ft. in Traverse.

Kent County: Sun Oil Co. 1 Geerligs et al, NW SW NW 25-9n-10w. Dry. TD 2,720 ft. in Traverse.

Kent County: James J. McGerry, Trustee 1 Emmorey, NE NW NW 10-10n-12w. Dry. TD 2,358 ft. in Traverse.

Oceana County: Associated Drillers & Producers, Inc. 1 Williams, SW SW SE 26-16n-15w. Dry. TD 2,045 ft. in Traverse.

Wexford County: John P. ONeill, 1 State-Selma, NW SE NE 36-22n-10w. Dry. TD 3,182 ft. in Traverse.

WEST VIRGINIA

* Webster County: Glade District. Gregory Gas Co. 1 C. B. Williams, elev. 2,285 ft. IP 158 M.c.f. of gas per day, Maxon sand 1,462-1-513 ft. gas 1,473-1,498 ft. TD 1,729 ft.

PENNSYLVANIA

Westmoreland County: Peoples Natural Gas Co. 4008 J. R. Frola, elev. 2,146 ft. Dry. TD 8,464 ft. Oriskany sand 8,288-8,347 ft.

FLORIDA

Okaloosa County: The California Co. 1 Blackman, 28-5n-24w. Dry. TD 5,773 ft. Elev. 238 ft., Chalk 3,017 ft., Eutaw 4,522 ft., lower Tuscaloosa 5,442 ft., Massive 5,559 ft., lower Cretaceous 5,739 ft.

MISSISSIPPI

Adams County: F. H. Shortridge and J. S. Callon 1 U.S.A., C SE SE 29-5n-1w. Dry. TD 7,002 ft. Elev. 199 ft., Vicksburg 2,530 ft., Wilcox 4,664 ft., base Baker shale 6,480 ft.

Clarke County: A. M. Keisker and C. A. Perkins 2 J. E. Toney estate, SW NE NE SW 21-1n-15e. Dry. TD 4,805 ft. Elev. 232 ft., Wilcox 842 ft., Selma 3,197 ft., Eutaw 4,312 ft. Eagle Ford 4,503 ft.

Franklin County: John S. Callon 1 McLemore, 3-6n-2e. Dry. TD 6,507 ft. Elev. 268 ft., Wilcox 4,150 ft., base Baker shale 5,967 ft.

SOUTH LOUISIANA

Beauregard Parish: Texas Pacific Coal & Oil Co. 1 Long Bell, 1-4s-8w. Dry. TD 7,879 ft.

Plaquemines Parish: Humble Oil & Refining Co. 1 State, Lease 2091, Southeast Pass. IP 328.8 BOPD, ¼-in., 41.4°, casing perforations 9,156-66 ft. TD 10,160 ft. (New pay in Southeast Pass field.)

M. L. Mayfield et al 1 Louisiana Fruit-State Lease 1783 Unit 1, 17-21s-31e. Dry. TD 11,546 ft.

St. John the Baptist Parish: Seaboard Oil Co. of Delaware 1 State Lease 1838, 17-13s-19e. Dry. TD 12,495 ft.

Terrebonne Parish: Union Oil Co. of California 2 Southdown, 83-17s-16e (Orange Grove area). Dry. TD 12,052 ft.

Vermilion Parish: Union Producing Co. 1 Louisiana Furs, 28-15s-1e. Dry. TD 12,820 ft.

NORTH LOUISIANA

* Bossier Parish: Pan Am Production Co. 1 Hunt, 5-19n-13w. IP 2,100 M.c.f. of gas per day, Bodcaw sand 8,316-30 ft. TD 8,368 ft. (Opens Willow Chute pool.)

Catahoula Parish: Barnett Serio et al 1 Risen, 27-7-6e. Dry. TD 5,795 ft.

DeSoto Parish: J. W. Brown et al 1 Fair, 1-10n-14w. Dry. TD 3,170 ft.

WILDCAT COMPLETIONS

* Lincoln Parish: Southwest Gas Producing Co. 1 Sherrard, 10-17n-3w. IP 4,900 M.c.f. of gas per day, Cotton Valley 10,063-10,073 ft. TD 10,073 ft. (New pay in Clay pool.)

Madison Parish: D. E. Vasser et al 1 Webb, C NE NE 50-17n-13e. Dry. TD 2,821 ft.

ARKANSAS

Miller County: Jay Simmons 1 Lurry, C NE NW 12-16s-27w. Dry. TD 5,316 ft.

OKLAHOMA

* Cimarron County: Cities Service Oil Co. 1 Whisennand, NE NE SW 2-5n-9eCM. IP 6,400 M.c.f., Keyes sand 4,604-28, 4,640-58 ft. TD 4,872 ft.

Cleveland County: McAlester Fuel Co. 1 J. C. Todd "A," NW SW 11-9n-3w. Dry. TD 10,219 ft. Joins 10,190 ft.

Cotton County: Drill Well Oil Co. 1 Gunn, SW NE NE NE 17-1s-9w. Dry. TD 2,354 ft.

Creek County: Illinois Exploration 1 Wright, NE NE NW 10-14n-9e. Dry. TD 3,010 ft.

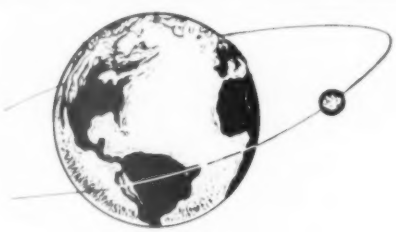
Ellis County: Carter Oil Co. 1 Irvin, C NW SE 27-23n-24w. Temp. abd. TD 9,100 ft.

* Kay County: H. Waggoner & Co. 2 Buesing, NW SE SE 32-27n-1e. IPF 360 BOPD, 44°,1st. Wilcox 3,724-36 ft. TD 3,736 ft. (New pay discovery.)

Don C. Matthews 1 Spore, NE NE NW 32-29n-3e. Dry. TD 3,393 ft.

Logan County: Fordee Rhoades 1 Brooks, NW NW NW 28-16n-1e. Dry. TD 5,577 ft.

* General Production 1 Schaefer, NE SW SE 28-15n-2w. IPF 15 BOPD, 3,791 M.c.f. gas per day, Bartlesville 5,832-48



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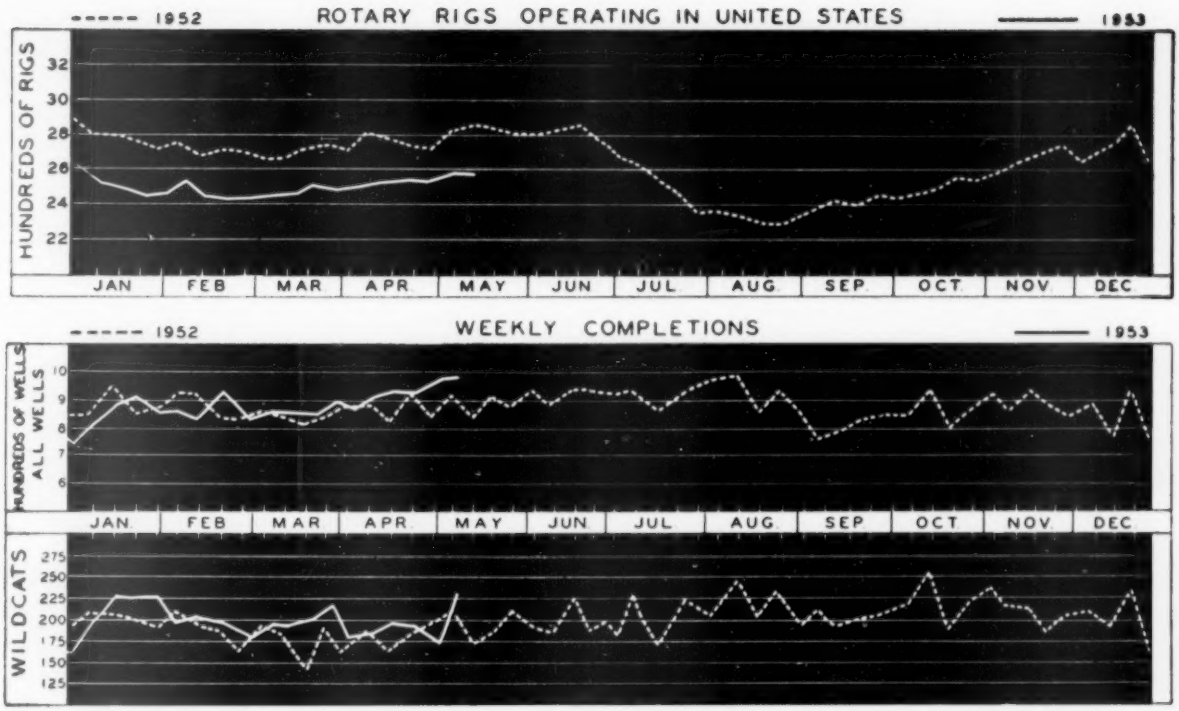
WILDCAT COMPLETIONS

ft. TD 6,351 ft. (gas discovery.)
Murray County: Vickers Petroleum 1 Greer, NE NW NW 1-1s-1e. Dry. TD 6,025 ft.
Okfuskee County: Norman T. Smith 1 Earnest, SE NE NE 32-11n-10e. Dry. TD 3,336 ft.
* Okmulgee County: K. Mouser 1 Gourmley, SE SE SW 16-13n-11e. IPF 150 BOPD, 43°, Misener 3,181-93 ft. TD 3,299 ft. (New pay at Northwest Gypsy Hills pool.)
Payne County: Warren Bradshaw and Sunray Oil Corp. 1 Walker, NE NE SE 12-19n-2e. Dry. TD 4,740 ft.
* Pottawatomie County: K. A. Ellison et al 1 Niehaus, NE SE SE 21-7n-3e. IPP 142 BOPD, 37°, Trenton 4,817-27 ft. TD 4,999 ft. (New pool.)
Seminole County: A. Ben Chadwell 1 Long, SE NW NW 1-6n-5e. Dry. TD 2,834 ft.
* Stephens County: Schermerhorn Oil Corp. 1 Ryan, SE SW NW 24-1n-4w. IPP 34 BOPD, 22°, 4,934-44 ft. TD 5,466 ft. (oil discovery.)

KANSAS

Barber County: Sinclair Oil & Gas Co. 1 Moffett, NE NW NW 9-30s-15w. Dry. TD 4,876 ft.
W. C. Doenges 1 Haas, NW NW NE 3-31s-12w. Dry. TD 4,732 ft.
Barton County: J. C. Dozier 1 Demel, SE SE NE 27-17s-12w. Dry. TD 3,395 ft.
Ash-Mar 1 Kimpler, SE SE SE 31-18s-11w. Dry. TD 3,450 ft.
Aladdin 1 Christopher, NE SW SE 13-19s-12w. Dry. TD 3,432 ft.
Fleming & Woodman et al 1 Schermuly, NE NE SE 24-20s-13w. Dry. TD 3,519 ft.
Butler County: Franco-Central 1 Harper, SW SW SW 5-29s-5e. Dry. TD 2,852 ft.
Clark County: Saturn Drilling Co. 1 Yeoman, NE NE NE 3-31s-21w. Dry. TD 5,299 ft.
* Cowley County: Laura Jane Oil Co. 1 Allen, SW SW NW 12-33s-3e. IPP 25 BOPD, Bartlesville 3,267-71 ft. TD 3,293 ft.
Ellsworth County: El Dorado-Rock Island 1 Hanley, SW SW SE 20-16s-8w. Dry. TD 3,457 ft.
Harvey County: G. L. Reasor 1 Hudson, SE SW NE 33-22s-1e. Dry. TD 3,606 ft.
* Marion County: Anderson-Prichard 1 Scully "A," SE NW NW 34-18s-2e. IPP 202 BOPD, Lansing-Kansas City 2,900-01 ft. TD 2,901 ft. (Opens Durham pool.)
F. Dieter 1 Schlehuver, NW NE SW 14-19s-1e. Dry. TD 3,343 ft.
Berry & Eells 1 Phillips, SW SW NW 23-19s-4e. Dry. TD 2,668 ft.
* McPherson County: National Associated Petroleum Corp. 1 Lively, NE SE NE 28-19s-2w. IPF 273 BOPD, Mississippian 2,955-63 ft. TD 2,963 ft. (Opens Lively pool.)
* Meade County: Columbian Fuel Corp. 1 Wheatley, C NW NW 30-33s-30w. IP 5,500 M.c.f. of gas per day, Morrow 5,642-52, 5,722-46 ft. TD 6,120 ft. (Opens Kismet East pool.)
Norton County: Empire 1 Wallach, NW NW NW 27-2s-23w. Dry. TD 3,660 ft.
Pawnee County: Musgrove 1 Schmidt, SW SW NE 17-21s-15w. Dry. TD 3,877 ft.
Phillips County: Isern 1 Hill, SE SE SE 31-5s-19w. Dry. TD 3,560 ft.
Pratt County: Musgrove 1 Reed, NE NE NW 27-27s-14w. Dry. TD 4,674 ft.
Reno County: Mid-Plains 1 Hayes, SW SW SW 24-25s-10w. Dry. TD 4,362 ft.
Morris Mizel 1 Schrag, fractional section 2-26s-6w. Dry. TD 4,135 ft.
Rooks County: Gulf Oil Corp. 1 Zellinger, SW NW NE 31-7s-18w. Dry. TD 3,410 ft.
Rush County: M. B. Armer 1 Seltman, SE SE SE 28-19s-19w. Dry. TD 4,284 ft.

(Continued on page 516)



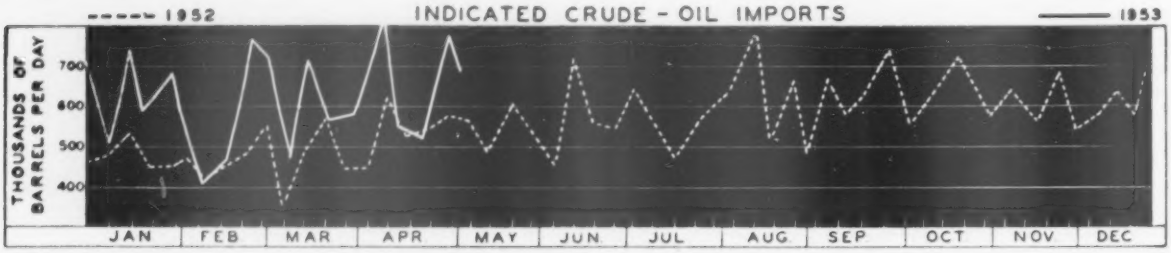
CURRENT STATISTICS

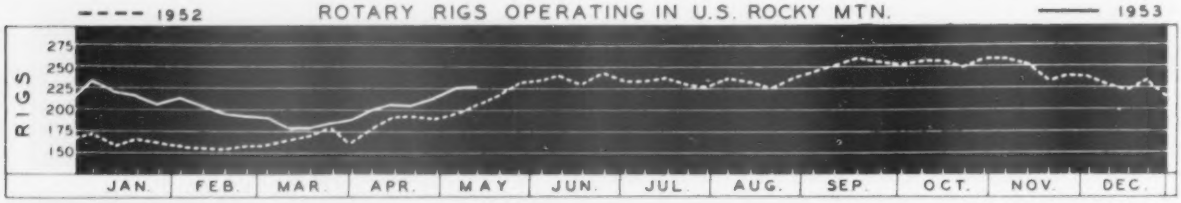
EXPLORATION

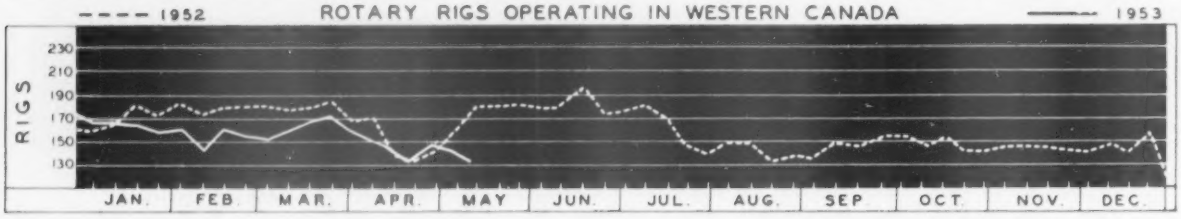
WEEKLY WELL COMPLETIONS . . . WEEK ENDED MAY 9, 1953

	Total of all wells					May 9		Wildcat completions and discoveries					Cumulative total, 1953				
	Comp.	Oil	Gas	Dry	Footage	1953	1952	Oil	Dist.	Gas	Dry	Total	Oil	Dist.	Gas	Dry	Total
New York	14	7	0	*7	20,100	239	260	0	0	0	0	0	0	0	0	0	0
Pennsylvania	34	17	4	†13	63,600	591	606	0	0	0	1	1	0	0	3	7	10
West Virginia	15	1	12	2	45,183	205	222	0	0	1	0	1	0	0	3	2	5
Ohio	10	4	2	‡4	20,716	345	331	0	0	0	0	0	1	0	1	9	11
Indiana	26	9	2	15	45,676	421	385	1	0	0	7	8	7	0	1	97	105
Kentucky	25	9	0	16	38,359	366	444	0	0	0	4	4	4	0	0	64	68
Illinois	43	21	0	22	97,998	591	533	0	0	0	8	8	1	0	0	115	116
Michigan	11	3	0	§8	28,940	189	233	0	0	0	7	7	7	0	3	74	84
Kansas	132	58	10	‡64	453,485	1,732	1,667	3	0	2	26	31	36	0	16	272	324
Nebraska	6	2	0	4	32,788	95	85	0	0	0	2	2	7	0	0	42	49
Oklahoma	132	81	5	‡46	473,102	2,420	2,123	4	0	2	10	16	37	4	9	221	271
Texas	376	204	26	146	1,678,922	5,993	6,528	14	2	5	89	110	304	24	73	1,446	1,847
N. Central (Dist. 7-B & 9)	134	76	2	56	454,276	2,179	2,019	7	0	0	36	43	158	0	8	607	773
West (Dist. 7-C & 8)	78	57	0	21	411,923	1,299	2,024	3	0	0	11	14	56	2	5	220	283
Panhandle (Dist. 10)	17	8	6	3	50,897	310	259	0	0	0	1	1	0	2	0	9	11
Eastern (Dist. 5 & 6)	27	10	4	13	126,748	293	319	0	1	1	9	11	8	2	3	94	107
Gulf Coast (Dist. 2 & 3)	52	20	5	27	293,732	894	981	1	0	3	13	17	43	5	33	225	306
Southwest (Dist. 1 & 4)	68	33	9	26	341,346	1,018	926	3	1	1	19	24	39	13	24	291	367
Louisiana	44	24	5	15	329,972	894	795	1	0	2	8	11	20	6	9	117	152
Northern	18	9	2	7	65,787	351	421	0	0	2	3	5	1	0	2	42	45
Southern	26	15	3	8	264,185	543	374	1	0	0	5	6	19	6	7	75	107
Arkansas	7	3	0	4	36,026	156	138	0	0	0	1	1	5	0	0	33	38
Mississippi	5	0	0	5	30,423	120	142	0	0	0	3	3	6	0	3	61	70
Southeastern States	2	0	0	2	9,386	49	19	0	0	0	1	1	1	0	0	34	35
Montana	7	2	0	5	18,443	128	70	0	0	0	1	1	1	6	0	33	34
Wyoming	5	3	0	2	21,291	200	207	0	0	0	2	2	5	0	0	34	39
Colorado	7	1	2	4	35,208	167	143	0	0	1	3	4	5	0	5	85	95
Utah	1	0	0	1	10,000	25	27	0	0	0	1	1	1	0	0	15	16
New Mexico	18	12	2	4	112,254	440	334	0	0	0	3	3	8	0	4	47	59
California	58	41	1	16	260,017	893	911	0	0	1	14	15	23	0	3	201	227
North Dakota	3	1	0	2	17,373	82	11	0	0	0	2	2	0	0	0	17	17
Miscellaneous	0	0	0	0	0	14	27	0	0	0	0	0	0	0	0	12	12
Total United States	981	503	71	407	3,879,262	16,355	16,241	23	2	14	193	232	479	34	133	3,038	3,684
Total previous week	980	531	98	351	3,930,229			22	2	12	138	174	456	32	119	2,845	3,452
Total May 10, 1952	838	446	62	330	3,410,655			29	1	5	136	169	514	36	93	2,830	3,473

Service wells included: *7, †12, ‡2, §1.



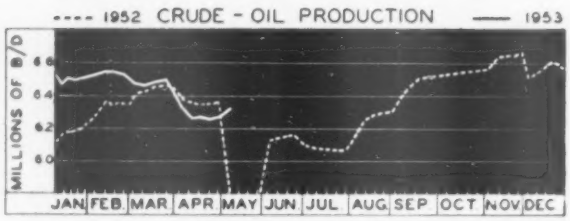


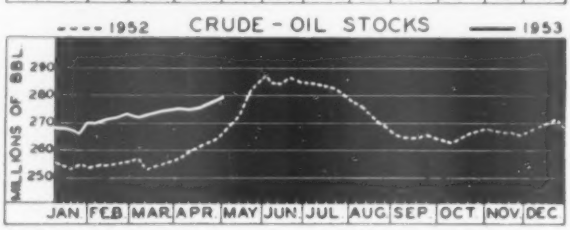


DAILY AVERAGE PRODUCTION FOR WEEK

	May 9			May 2
	Crude oil	Lease condensate	Total	total
Alabama	4,900		4,900	4,700
Arkansas	76,750	650	77,400	77,300
California	999,500		999,500	1,000,800
Colorado	94,700		94,700	94,500
Eastern	57,800		57,800	57,600
Florida	1,500		1,500	1,500
Illinois	161,200		161,200	163,800
Indiana	35,200		35,200	35,700
Kansas	321,500		321,500	316,400
Kentucky	29,900		29,900	29,800
Louisiana	661,325	41,000	702,325	693,100
North	111,000	2,500	113,500	113,500
South	550,325	38,500	588,825	579,600
Michigan	34,200		34,200	33,900
Mississippi	92,850	4,900	97,750	98,200
Montana	31,400		31,400	30,600
Nebraska	13,500		13,500	13,300
New Mexico	189,125	700	189,825	186,700
Oklahoma	530,200		530,200	539,500
Texas	2,671,575	45,475	2,717,050	2,671,625
Dist. 1	35,075	350	25,425	34,850
Dist. 2	146,500	6,325	152,825	151,975
Dist. 3	438,625	23,000	461,625	459,950
Dist. 4	248,725	5,200	253,925	250,200
Dist. 5	46,700	400	47,100	46,950
Dist. 6	119,950	5,700	125,650	124,775
East Texas field	247,000		247,000	252,000
Dist. 7-B	108,000	75	108,075	104,475
Dist. 7-C	151,800	3,500	155,300	142,225
Dist. 8	888,250	200	888,450	866,525
Dist. 9	168,250	700	168,950	165,400
Dist. 10	72,700	25	72,725	72,300
Utah	5,300		5,300	5,000
Wyoming	209,100		209,100	207,600
North Dakota	14,600		14,600	13,900
Total U. S	6,236,125	92,725	6,328,850	6,275,525
Change from previous week, up			53,325	
Canada	195,000		195,000	192,550
Total U. S. production January 1-May 9			830,342,175 bbl.	
Same period last year (crude plus cond.)			*814,237,200 bbl.	

*Includes 12,393,010 bbl. condensate.



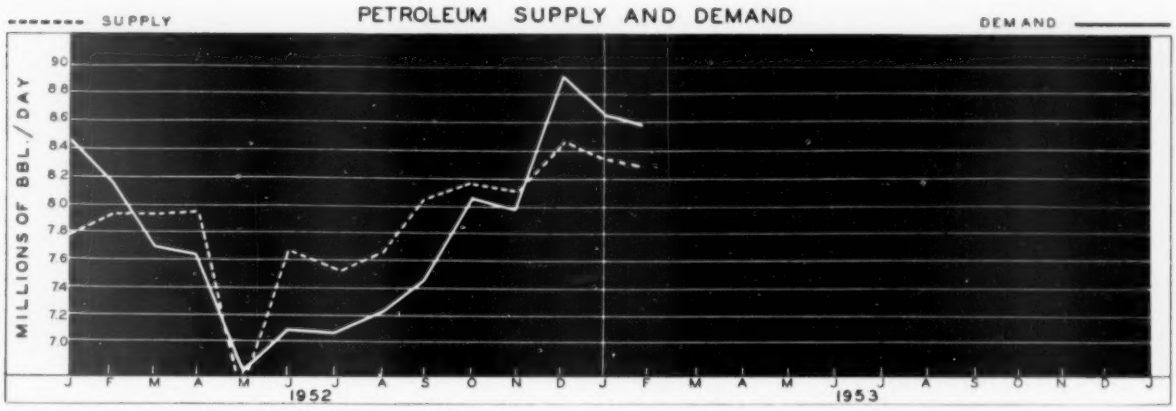


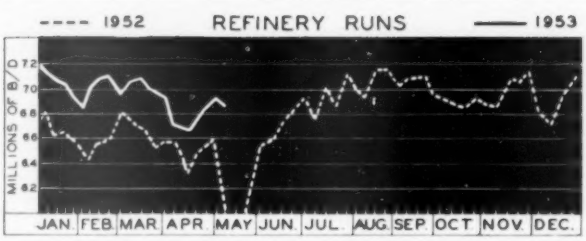
CRUDE-OIL STOCKS BY STATES OF ORIGIN*

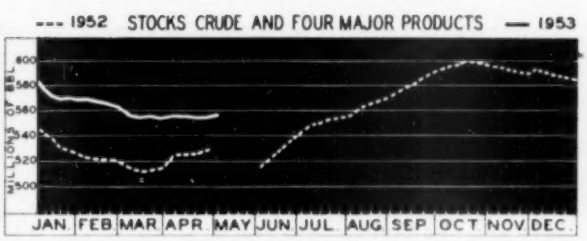
(Thousands of barrels)

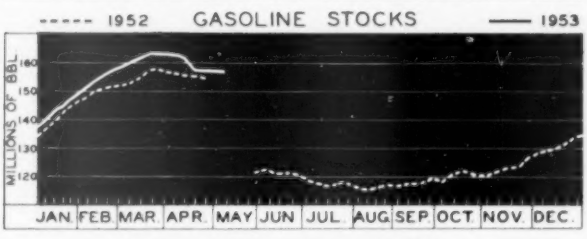
	May 2, '53	Apr. 25, '53	May 3, '52
Pennsylvania Grade	2,527	2,445	2,442
Other Appalachian	1,961	1,934	2,140
Illinois, Indiana, Michigan	11,601	10,748	12,316
Arkansas	3,036	3,050	3,065
Louisiana	15,839	16,202	14,616
North	2,687	2,737	2,890
Gulf	13,152	13,465	11,726
Mississippi	4,055	3,995	3,695
New Mexico	7,469	7,348	7,490
Oklahoma and Kansas	38,784	39,277	42,867
Texas	136,537	135,329	128,023
East Texas proper	11,772	11,753	12,177
West Texas	64,068	64,186	56,724
Texas Gulf	26,396	25,981	27,796
Other Texas	34,301	33,409	31,326
Rocky Mountain	16,381	16,369	15,024
California	33,255	33,316	30,473
Foreign	8,124	8,218	7,464
Total	279,569	278,231	269,615

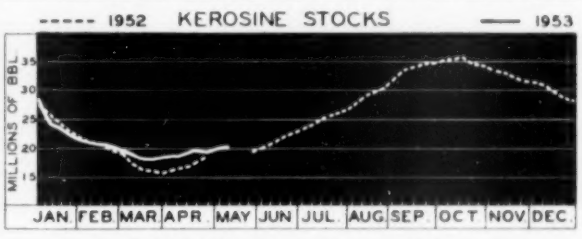
*Bureau of Mines.

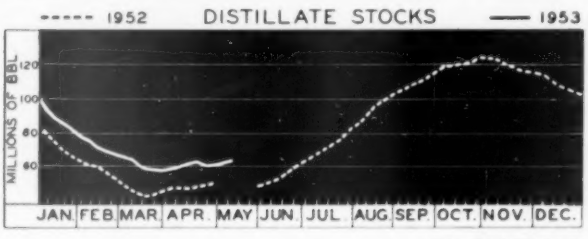


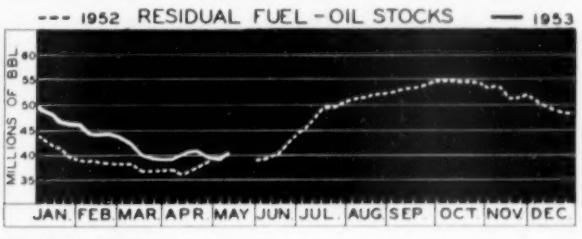










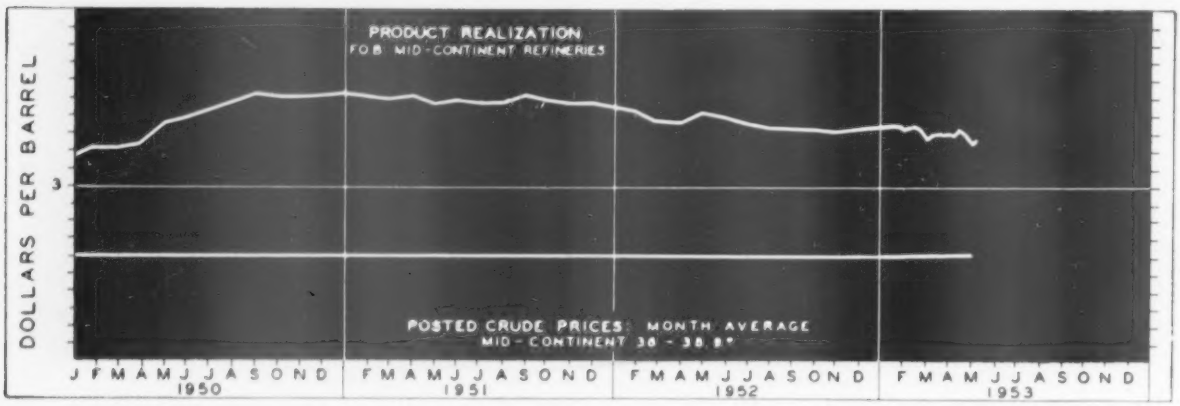


A.P.I. REFINERY REPORT, MAY 9

(Thousands of barrels)

District—	Daily avg. runs	Daily average production—Gaso.*	Kero.	Dist.	Resid.	Stocks‡—Gaso.†	Kero.	Dist.	Resid.	Bureau of Mines, May 1952—Daily avg. runs	Daily average production—Gaso.*	Kero.	Dist.	Resid.
East Coast	1,007	440.7	35.3	231.0	236.8	35,490	8,716	19,870	9,609	1,005	411.0	43.0	219.7	203.7
Appalachian:														
District 1	107	39.9	4.3	17.3	14.4	3,916	379	830	348	102	43.9	3.3	16.3	13.3
District 2	97	47.3	3.4	13.4	15.3	1,705	244	386	108	43	22.9	2.0	7.3	8.6
Ind., Ill., Ky.	1,191	617.0	69.4	189.3	158.9	33,754	3,361	8,686	3,100	741	378.1	37.3	127.4	105.0
Okla., Kans., Mo.	513	270.6	17.7	107.1	51.6	18,227	1,301	6,415	1,267	373	205.9	9.5	82.7	37.7
Inland Texas	263	175.7	16.7	36.4	35.1	6,388	382	1,375	968	269	187.8	12.4	41.6	42.2
Texas Gulf Coast	1,730	788.7	109.0	411.4	231.6	20,798	2,918	9,582	6,296	629	270.1	55.0	184.7	77.3
La. Gulf Coast	570	273.2	64.2	128.9	72.6	7,088	1,864	3,717	1,387	507	236.8	51.6	110.9	59.1
N. La. and Ark.	86	33.4	9.0	15.6	7.1	3,421	409	1,029	147	66	22.7	3.6	14.9	7.7
Rocky Mountain:														
New Mexico	18	11.7		2.9	3.7	148		34	28	17	10.1	.5	3.1	4.3
Other Rocky Mtn.	220	113.0	6.9	49.7	41.0	6,826	294	1,719	851	189	79.9	4.0	41.1	36.0
California	1,063	480.4	3.1	149.1	385.0	19,576	353	9,321	15,961	964	426.0	6.3	132.0	383.7
May 9, 1953	6,865	3,291.6	339.0	1,352.1	1,253.1	157,337	20,221	62,964	40,070	4,905	2,295.2	228.5	981.7	978.6
May 2, 1953	6,949	3,331.7	382.0	1,430.3	1,208.1	157,599	20,040	61,314	38,989					
May 10, 1952						(Data incomplete for 1952 strike period)								

*At refineries including natural blended. †Finished and unfinished. ‡At refineries, bulk terminals, in transit, and in pipe lines.


PRODUCT REALIZATION
F.O.B. MID-CONTINENT REFINERIES
DOLLARS PER BARREL
3
POSTED CRUDE PRICES: MONTH AVERAGE
MID-CONTINENT 38 - 38.8°
J F M A M J J A S O N D
1950
F M A M J J A S O N D
1951
F M A M J J A S O N D
1952
F M A M J J A S O N D
1953

In this trend chart refinery realization is based on average Mid-Continent grade crude oil (not 38° gravity only) and average prices for refinery products as published in The Oil and Gas Journal basis Oklahoma (Group 3). Refinery yields confined to gasoline, kerosine, distillate and fuel oil. Realization averaged $3.26 for week ended May 2, $3.24 for previous week, and $3.41 for May 1952. The above trend information is based on volumes and current prices and therefore does not reflect changes in operating costs.

REPRESENTATIVE QUOTATIONS

Representative spot-market quotations of leading suppliers as of May 13, 1953. Figures are f.o.b. plant for tank-car shipments in cents per gallon, except for residual fuel oil which shows the price per barrel and wax, in cents per pound.

GASOLINE, KEROSINE, AND FUEL OILS

	Mid-Continent Group 3	New York Harbor (barge)	Texas Gulf Coast
Regular gasoline	10¼-10½	12-12.75	10½-11
Premium gasoline	11¼-11½	13.125-14	11¾-12
42-44 w.w. kerosine	8⅜-8¾	10.15-10.65	9
No. 2 straw fuel oil	7⅜-7¾	9.15-9.65	8
No. 6 residual	$0.85-1.00	$2.10-2.25	$1.60-1.70

NATURAL GASOLINE

	Group 3	North Texas	N. La.
Grade 26-70	5½	5	5¼
Grade 18-55	6.60	6.10	6.35

LUBRICATING OILS

South Texas

200 vis., No. 2-3 neutral	12-13
750 vis., No. 3-4 neutral	15-16
2,000 No. 5-6 neutral	17-18

LUBRICATING OILS

Mid-Continent

150-160 vis., D bright stock, 0-10 pp.	20.5-22
200 vis., No. 3 neutral, 0-10 pp.	12-13

Western Pennsylvania

145-155 vis., 10 p.t. bright stock	26.5
180 vis., 10 p.t. neutral	28.5

WAX

Mid-Continent

132-134 A.M.P.	5.5

THE general confusion that existed for several days in the Gulf Coast heating-oil market influenced trading in the New York Harbor area. Early in the first week of May, it was reported that a primary supplier had reduced kerosine and distillate prices at the gulf by 0.5 cent a gallon.

Esso Export Corp. met the reported cut by a reduction in Aruba prices for these products, retroactive to May 1. The company originating the lower price returned to the old posting of 8 cents for No. 2 fuel and 9 cents for kerosine, and Esso Export returned to the same quotations for Aruba.

The trend in kerosine and distillate stocks for the last week of April indicated some softening of middle-distillate markets on the Gulf Coast. Distillate stocks in the coastal districts of Texas and Louisiana increased 1,013,000 bbl. in the week ended May 2 and decreased 715,000 bbl. on the East Coast. Also, kerosine stocks on the Gulf Coast gained 583,000 bbl.

Some distillate is reported to be moving to the Gulf Coast from the Mid-Continent, but this started before the price confusion on the Gulf Coast market. Some distillate moved out of pipe-line terminals in the North Central states because of colder-than-normal weather in April, and increased demand is again reported as a result of the lower temperatures during the second week of May.

Heavy fuel for railroads in the Mid-Continent is bringing refiners 90 cents a barrel in May, but material is readily available in the Group 3 area at 85 cents.

Group 3 regular gasoline is still available at pipe-line terminals in limited amounts at 10.375 cents plus transportation, and intercompany trading in most cases is at these prices. Before the soft market in the spring of 1952 and the tight market following the strike, most primary buying and selling in the line was at the low plus 0.25 cent a gallon.

CRUDE PRICES
GRAVITY SCHEDULE

	Signal Hill, Calif‡	Okla. homa, Kansas	Gulf Coast Tex.*	West Tex.†
14-14.9	$1.87			
15-15.9	1.93			
16-16.9	1.99			
17-17.9	2.05			
18-18.9	2.11			
19-19.9	2.18			
20-20.9	2.24	$2.25		$2.12
21-21.9	2.30	2.27		2.14
22-22.9	2.37	2.29		2.16
23-23.9	2.45	2.31		2.18
24-24.9	2.53	2.33	$2.56	2.20
25-25.9	2.61	2.35	2.58	2.22
26-26.9	2.69	2.37	2.60	2.24
27-27.9	2.76	2.39	2.62	2.26
28-28.9	2.83	2.41	2.64	2.28
29-29.9	2.91	2.43	2.66	2.30
30-30.9	2.97	2.45	2.68	2.32
31-31.9	3.04	2.47	2.70	2.34
32-32.9	3.12	2.49	2.72	2.36
33-33.9		2.51	2.74	2.38
34-34.9		2.53	2.76	2.40
35-35.9		2.55	2.78	2.42
36-36.9		2.57	2.80	2.44
37-37.9		2.59	2.82	2.46
38-38.9		2.61	2.84	2.48
39-39.9		2.63	2.86	2.50
40 and above		2.65	2.88	2.52

*For crude from Daboval, El Campo, and Sand Point.

‡Includes Lea County, New Mexico.

Last general price change represented a 50-cent increase, effective December 6, 1947.

‡Standard Oil Co. of California.

FLAT CRUDE PRICES

Representative posted schedules per barrel

Louisiana:	
Beauregard Parish	$2.60
Cotton Valley (distillate)	2.85
Cotton Valley (crude)	2.70
Texas:	
East Texas	2.65
Pecos County (Yates)	2.35
Conroe	2.83
Van	2.48
Pennsylvania Grade:	
Bradford	4.40
Southwest Pennsylvania	3.97
West Virginia	3.91
Illinois Basin	2.77

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FOR SALE: 8—Shriver 42"x42" cast iron Filter Presses, Plate & Frame type, 18, 27 and 54 chambers, 1" cake; 15—Sperry 18"x18" cast iron Filter Presses, 11 chambers; 2—#12 Sweetland Filters for 36 leaves on 4" centers. Immediate shipment. Attractively priced. Consolidated Products Co. Inc., 17-20 Park Row, New York 38, N. Y. BArclay 7-0600.

FOR SALE

All steel roof and steel constructed tanks 4—5,000 bbl., 10—10,000 bbl., 1—25,000 bbl., 5—55,000 bbl., 2—80,000 bbl. Inspect Wichita, Kans. Will sell as is, or cut down and loaded on cars, or for steel plates.

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Good Condition for Immediate Use
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84" x 42' x ¾" Fractionating Tower—12 Trays.
48" x 40' x ⅜" Fractionating Tower—16 Trays.
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Strippers, Condensers, Pumps for Towers Available, Tube Still & Shell Stills in Operating Condition.
835 Sq. Ft. Leach Condenser (Heat Exchanger) Size 33T 214, 8 Liquid Passes.
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5— 500 Bbl. 4— 250 Bbl.
10—200 Bbl.

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212 Victor Street, St. Louis, Missouri
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N-4 BREWSTER rotary drilling rig, 12" Gardner-Denver pump w/ NKU Waukesha engine. Lee C. Moore mast, 5½' Substructure, 5800' of 3½" Ext. upset int. flush drill pipe. All purchased new. Has been in use 12 mos. A-1 condition. Write Box 4657, Oklahoma City, or Pho. ME 4-1413.

SALES and rentals of cable drilling and fishing tools, casing and equipment from the Southwest's largest stock of used cable tools and oil field supplies. Degen Pipe and Supply Co., Tulsa, Oklahoma.

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STANDARD rig—all size tools 6¼" to 13". Lots of extras. Everything you need to drill a well. Excellent condition. $5000.00. Located near Marietta, Ohio. M. N. Judson, Rural Valley, Pa. 3-311.

Easy Joint Break-out!
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ARMITE LABS., 6609 Broad St., Los Angeles 1, Calif.
Ball & Black Supply Co., 2871 E. Pico, L. A. 23, Calif.

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Gaso Duplex 4½″ x 6″ Power Pumps with Chrysler C-36 Engines, skid mounted, immediate delivery. Also Byron Jackson, Carter Centrifugal Units. Westinghouse 20-25-50 KW Generating Units.

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AT-3427—Houston, Texas

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Complete National 100 Rig including 3 PTD-6 Superior Diesel Engines with dual fuel equipment, 136′ Lee C. Moore [illegible]t with 8′ substructure, 2 C-350 Ideal [illegible]r Pumps, Ideal Type 548 TC Traveling Block, Type R3 Swivel, and Type MS-20½ Rotary Table. Excellent condition, priced reasonable, located in Montana. Complete inventory upon request.

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2—Coolers same as above only for 500# WP. Heat exchangers, centrifugal pump, Clark Bros. and Cooper-Bessemer Compressor Cylinders.

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A. GREENSPON PIPE CO., INC., 50 South Bemiston Avenue, St. Louis 5, Missouri. Phone: PArkview 6885.

WANTED TO BUY

Good used 6" OD Plain End Pipe: also 6¼" 13# Casing T&C.

CENTRAL PIPE & SUPPLY CO.
Box 1466, Phone 5581, Lubbock, Texas

WE BUY SURPLUS VALVES and FITTINGS

We want your surplus valves, flanges and fittings. Write or call.

Newman's Inc.
700 So. Maybelle Tulsa, Okla.
LD 635 Phone 2-5228

HELP WANTED

OIL Industry Employment Service, 405 Tuloma Bldg., Tulsa, Okla. 4-5974. Tom Robinson, owner. For Technical and Trained Personnel, including LPG.

SALES MANAGER

Men between ages 27 and 42 to handle sales of oil field drilling and production equipment. Manufacturer is represented in all major oil fields in United States. Applicants must have previous experience in handling men and selling to oil field drilling trade. Man can make good salary at present volume with excellent opportunity to increase sales. Write **Box G-459, The Oil and Gas Journal, Tulsa, Oklahoma.**

HELP WANTED

FOREIGN EMPLOYMENT. List of oil companies and drilling contractors showing where to apply for foreign jobs. OIML Co., Box 2603, Tulsa, Okla. $5.00 cash.

MUD MAN
We are looking for a man who has actual experience in the field with drilling mud. Experience should be either on the rig, with a mud supply house, or a mud service company. We need an area supervisor who is interested in greater earnings with an established and growing manufacturer. Our organization knows of this ad. Write Box G-474, The Oil and Gas Journal, Tulsa, Oklahoma.

TERMINALS ENGINEER & Supervisor: To supervise construction and maintenance of petroleum products terminals. Age to 40. Experience such work necessary. Engineering degree desirable but not required. Locate in Southeast. Some travel required. Salary open. In applying give complete details as to personal, educational and experience background, and salary expected. Box G-475, The Oil and Gas Journal, Tulsa, Oklahoma.

PETROLEUM ENGINEERS

FOREIGN SERVICE

Graduate engineers with good background in general physics, mathematics, mechanics and with some laboratory experience in equipment and techniques. For laboratory position responsible for theoretical experimental studies on reservoir fluid and rocks. Duties will consist of designing equipment, performing or supervising testing and analyzing and reporting results. Studies pertinent to evaluation of primary depletion practices and applicability of secondary recovery for pressure maintenance operation will be required.

Please write giving full particulars regarding personal history and work experience. Please include telephone number.

RECRUITING SUPERVISOR
BOX OG-5
Arabian-American Oil Company
505 Park Avenue
New York 22, N. Y.

HELP WANTED

CHEMICAL Engineer for work in natural gas and gasoline field with independent in West Texas. Gasoline plant experience desirable, but not required. Include education, complete brief of experience, and salary expected, in first reply. Box G-492, The Oil and Gas Journal, Tulsa, Oklahoma.

SOUTH AMERICA. These jobs are with one of the better oil companies. Our fee paid. Mechanical Engineer—graduate, no experience required. Petroleum Engineer—graduate, no experience required. Chemical Engineer—graduate, no experience required. Mud Technician—two or more years' experience, single. Accountant—college graduate, Accounting major, single. All information confidential and should be mailed to CHAS. J. LOVELESS PERSONNEL SERVICE, 616 S. Main, Tulsa, Oklahoma. Phone 3-5168.

SUPERINTENDENTS
for
Electrical Installations
Domestic Petroleum Refinery Construction

Qualified applicants must have accredited college degrees in Electrical Engineering and minimum six years responsible supervisory experience directing electrical operations in petroleum refinery construction.

Applicants must have initiative and qualifications pertinent to correlating designs with job site conditions.

These challenging positions offer excellent salaries plus opportunity for advancement in expanding construction programs.

Applications must include complete detailed chronological history of education (naming schools and colleges attended, degrees received), names of employers (including periods employed, positions held, salary received, nature and location of projects supervised). Name past employer references we are permitted to contact prior to interview.

Applications Are Confidential

Interviews arranged in New York City at our expense. Send complete information requested to

PERSONNEL DEPARTMENT
HYDROCARBON RESEARCH, INC.
115 Broadway New York 6, N. Y.

CONTROLLER

For progressive and expanding petroleum service organization. Background in public and private accounting with experience in finance. Must be capable of taking active part in management. 35-45 age bracket. Submit resume of education, experience, and salary requirements. Replies confidential.

Box G-493
The Oil and Gas Journal
Tulsa, Oklahoma

HELP WANTED

ENGINEERS, Executives, Technical Men. Salaried positions—$3600 to $30,000. This confidential service for outstanding men who desire a change of connection. Will develop and conduct preliminary negotiations without risk to present position. Send name and address for details. Tomsett Associates, 434 Frick Bldg., Pittsburgh 19, Pa.

SALES REPRESENTATIVE: Age 28 to 40 mechanical background contact oil industry Rocky Mountain oilfield territory. Headquarter in Casper, Wyoming. Excellent future in one of the oldest firms in their field. Car, expenses, plus salary commensurate with background and ability. Applicants must furnish complete background of employment, education, also other qualifications in initial letter. Replies treated confidential. Box G-481, The Oil and Gas Journal, Tulsa, Oklahoma.

MAINTENANCE SUPERINTENDENT

Wanted by smaller Kansas refinery with ambitious plans. Excellent opportunity for man who can handle men, read blue prints and carry out miscellaneous construction and maintenance **AND** who wants to grow and advance with the organization. Give details of experience, references and salary desired. Our own people know of this ad. Reply to

Box G-458

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

GEOLOGIST
SOUTH AMERICA

Major oil company affiliated with Standard Oil Company (N. J.) has attractive staff position available for experienced surface geologist. Must be qualified to assume professional and administrative duties of party chief for field party.

Write giving age, marital status, education, and details of experience.

Box 308-G

Radio City Station
New York 19, N. Y.

EQUIPMENT INSPECTION ENGINEERS SOUTH AMERICA

A major oil company affiliated with Standard Oil Company (N. J.) needs graduate engineers with several years refinery process equipment inspection experience. Must be qualified to interpret codes and specifications, predict equipment renewals, and recommend replacement equipment.
Write giving age, marital status, education, and full details of experience.

Box 308-H

Radio City Station
New York 19, N. Y.

HELP WANTED

SEISMIC PERSONNEL needed for United States and Canada by well known and expanding contract geophysical company. Address Box E-863, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED IMMEDIATELY—Man experienced in PVT analysis and interpretation to take charge of PVT Department in a commercial laboratory operating in the Rocky Mountains. Salary open. Write P.O. Box 279, Casper, Wyoming, or Telephone 3-5741.

INDEPENDENT OIL COMPANY desires geologist on part-time basis. Should be experienced in mapping and checking desirable areas for lease plays and drilling. Give full details on educational and experience backgrounds and remuneration desired. All replies confidential. The Oil and Gas Journal, Box G-483, Tulsa, Oklahoma.

ENGINEERS WANTED

Anderson - Prichard Oil Corporation, Oklahoma City, Oklahoma, has Production Department openings for several engineers with degrees in petroleum or mechanical engineering. Excellent opportunity for young man interested in oil producing and drilling operations or reservoir and evaluation work. A year's experience is desirable, but college education and willingness to assume responsibility are essential prerequisites. Initial location will be Oklahoma City. Applicants should write giving age, brief review of education and experience, and salary expected. Please address

ANDERSON-PRICHARD OIL CORPORATION

Liberty National Bank Building, Oklahoma City, Oklahoma, for the attention of Mr. D. F. Tver, Industrial Relations Department.

JOB SUPERINTENDENT

Petroleum Refinery Construction

SAO PAULO, BRAZIL

Accredited college degree in Civil, Mechanical or Chemical Engineering and minimum five years' responsible supervisory experience as superintendent directing all phases of operations in petroleum refinery construction

or

Minimum two years accredited college engineering and ten years' experience stated above.

Challenging position, excellent salary + subsistence allowance. Selected applicant's immediate family transported and returned at our expense.

Applications must include complete detailed chronological history of education (naming schools and colleges attended, degrees received), names of employers (including periods employed, positions held, salaries received, nature and location of projects supervised). Name past employer references we are permitted to contact prior to interview.

Applications Are Confidential

Interviews arranged in New York City at our expense. Send complete information requested to

PERSONNEL DEPARTMENT:

HYDROCARBON RESEARCH, INC.
115 Broadway New York 6, N.Y.

HELP WANTED

PETROLEUM GEOLOGIST: About 35 years of age who has had experience in Permian and Pennsylvanian areas, as in West Central and North Texas, Oklahoma and Kansas, both subsurface and surface. Will headquarter in Fort Worth but must be willing to be away from home a reasonable amount of time. Give details of education, experience and salary expected. HILL & HILL, Attention: R. R. Thompson, Geologist, 1325 Forth Worth National Bank Building, Fort Worth 2, Texas.

PETROLEUM ENGRS., GEOLOGISTS, REFINERY MEN; Rocky Mtn. positions with Majors and Independents. Specialists in drilling, production, reservoir, refinery operation. Professional Placement Service, 516 University Bldg., Denver, Colorado.

WANTED
CHIEF GEOLOGIST
for
Aggressive Independent Oil Company

Operating in Rocky Mountain Area, Mid-Continent, North and West Texas.
Experience in these areas desirable. Give complete details of education and experience by letter in duplicate. All replies held confidential.

Box G-460

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

SITUATIONS WANTED

ACCOUNTANT—14 years experience in production department of Mid-Continent Independent, 37 years of age with family of three children desires position with aggressive production company. Have also had some field supervision experience in Kansas. Box G-467, The Oil and Gas Journal, Tulsa, Oklahoma.

M.E. AND I.E. GRADUATE seeking manufacturers to represent in Okla. area. Three years selling experience. One year equipment buyer large oil company. Own car, single, free to travel. Box G-477, The Oil and Gas Journal, Tulsa, Oklahoma.

PROCESS SUPERVISOR, Chemical Engineer, age 34, 10 years experience in refinery design, economics, and process supervision. Desires supervisory or technical position in progressive refinery or petrochemical plant. Box G-424, The Oil and Gas Journal, Tulsa, Oklahoma.

GEOLOGIST, 32, five years Rocky Mountain and two years Mid-Continent—Gulf Coast major company experience wants job with independent company Rocky Mountain Area. Box G-440, The Oil and Gas Journal, Tulsa, Oklahoma.

ELECTRICIAN—8 years experience major chemical company—2 years utility company. Married—age 27—desires maintenance major oil company—South America. Box G-447, The Oil and Gas Journal, Tulsa, Oklahoma.

ATTENTION: Well established oil well drilling contractor desires to manage and supervise: Individuals', groups' small or medium-sized oil companies' drilling, production and operating problems in Central and Western Texas and New Mexico. Personal interview by appointment is desired. Makin Drilling Company, Box No. 1628, Ph. No. 3-3141, Hobbs, New Mexico.

SALES ENGINEER, age 40, twenty years experience in drilling and servicing companies, including foreign fields, wants job with aggressive organization, preferably promoting new tools. Box G-472, The Oil and Gas Journal, Tulsa, Oklahoma.

GRADUATE CHEMIST, refinery experience, broad knowledge development and sale of asphalt specialties. Available immediately, location unimportant. Box G-491, The Oil and Gas Journal, Tulsa, Oklahoma.

SITUATIONS WANTED

LANDMAN 36, Family. Major Company experience and widely acquainted. Now employed Independent producer, desires District position preferably Tulsa or Oklahoma City. Box G-489, The Oil and Gas Journal, Tulsa, Oklahoma.

GEOLOGIST - Micropaleontologist. MA. 6 years experience in Gulf Coast Area with major, desires change. Box G-488, The Oil and Gas Journal, Tulsa, Okla.

WANTED: Employment with independent oil company as material man or purchasing agent. I have 17 years experience with major oil-field supply companies in Oklahoma and Texas. Can furnish good references. 39 years of age, good health, etc. Not too particular as to location. If you have opening for man of my experience please write to Box G-487, The Oil and Gas Journal, Tulsa, Oklahoma.

RECENTLY retired geologist, wide and successful experience, good health, desires part or full time engagement. Box G-495, The Oil and Gas Journal, Tulsa, Oklahoma.

CORROSION Engineer — married, seven years pipeline corrosion experience. Desires change with opportunity for advancement—preferably new transmission company or company planning Corrosion Department. Box G-494, The Oil and Gas Journal, Tulsa, Okla.

EXPERIENCED subsurface geologist desires position with responsible party in Mid-Continent area. Box G-490, The Oil and Gas Journal, Tulsa, Oklahoma.

LEASE AND DRILLING BLOCKS

"SHALLOW PRODUCTION is scarce. You'll get it on my Tennessee structures." N. M. Sauls, Geologist, Cookeville, Tenn.

FOR SALE: Oil leases in Heart of Williston Basin, Mountrail County, North Dakota. E. G. Ranum, Valley City, N. D.

CASH on the barrel head for your producing oil royalties. Send complete details at once in first letter. Write us before you sell. Box G-486, The Oil and Gas Journal, Tulsa, Oklahoma.

LEASES ROYALTIES

Producing and Nonproducing

Bought and Sold—Any Area

Inquiries Invited

B. D. BUCKLEY

6635 Delmar Ave., St. Louis 5, Mo

Producing Property Wanted

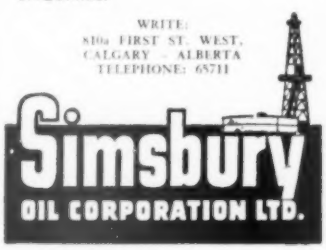
Interested in acquiring oil or gas producing property with substantial reserves. Large deal preferred. Also interested in drilling deals. Contact

Box G-463, The Oil and Gas Journal, Tulsa, Oklahoma

Canadian Oil Royalties, Leases and Production

AS SPECIALISTS TRADING IN OIL PROPERTIES, WE INVITE YOUR ENQUIRIES.

WRITE:
810a FIRST ST. WEST,
CALGARY - ALBERTA
TELEPHONE: 65711



LEASE AND DRILLING BLOCKS

WILL SELL nine producing wells on 400 acres with proven locations yet to be drilled. Situated in Western Kansas. Address C. M. Powell, 909 Central Bldg., Wichita, Kans.

WILL pay cash instantly for leases (large blocks), royalties, mineral deeds, production. Write fully—P. O. Box 2153, Denver, Colorado.

SEE A. L. Bowles, Rollow Building, Ada, Oklahoma, for drilling deals.

FOR SALE: 26 producing wells located in Salt Flats Field, Luling, Texas. Total production approximately 3500 barrels per month can be increased by close supervision. 5 houses, supplies, and equipment. Plenty of acreage to drill additional wells. A real bargain and a good opportunity to get into the oil business. Priced to sell at $175,000.00. Contact Kenneth Blackmar, Luling, Texas, or Riddle Oil Co., 59 East Van Buren, Chicago 5, Illinois.

CAN GET large block of acreage in New Mexico. Good geology. Will put together for expenses and some acreage. Box G-470, The Oil and Gas Journal, Tulsa, Oklahoma.

EASTERN independent individual interested from owners, small or large producing property with drilling locations old or new field can handle up to $20,000,000. Need full detail and competent engineers report. Confidential. Box G-469, The Oil and Gas Journal, Tulsa, Oklahoma.

CHANCE of a Lifetime! Selling choice producing oil properties. Write today for details. Limited number of shares available. Box G-485, The Oil and Gas Journal, Tulsa, Oklahoma.

ROYALTIES

PRODUCING ROYALTY and overrides for sale. Wire-write-call for particulars. JACK EAGLE, 706 City Natl. Bldg., Okla. City, Okla. REgent 6-7027.

QUICK CASH: Producing royalties. Overrides or Production . . . no delay. Phone 72-4533, Robert L. Kinkaid . . . P.O. Box 26, Tulsa, Oklahoma.

GET TOGETHER: Both Capital and Royalties are available. If the investment proposition you want isn't listed in this column use a Journal classified advertisement to find it. See box heading for classified rates or write The Oil and Gas Journal.

ROYALTIES WANTED

Producing Royalties
High Grade Only
Send Full Particulars
Address

C. C. HARMON

719 World Bldg., Tulsa, Okla.
P.O. Box 2151

DRILLING DEALS WANTED

RELIABLE well drilling contractor with good equipment desires connection with individuals or small groups wanting wells drilled, or a development program in Oklahoma. Will drill your lease or help you secure good leases and drill for you. Sellers and Sellers, Box 606, Holdenville, Oklahoma. Phone 1098.

PUBLICATIONS

OUT-OF-PRINT Government Geological Publications and files of Technical Journals our specialty. Inquiries welcomed. CANNER'S (Dept. Ogj), Boston 19, Mass.

PRODUCTION WANTED

WE CAN USE up to 5,000 barrel daily production or royalty. We can also use lease which has production, but owner needs additional capital to complete drilling. Box 194, Longmont, Colorado.

REAL ESTATE

AUTO COURT and trailer park, 1½ blocks off 66 highway in western Arizona. Five double cabins and space for ten trailers. Year round business. Priced for quick sale, $7,500.00 cash. Box G-471, The Oil and Gas Journal, Tulsa, Oklahoma.

GEOLOGISTS

NO OIL NO PAY—Geochemical exploration—Iroco Laboratory—P. O. Box 630, Stillwater, Okla.

WANTED

WANTED: Oil production or oil company wanted any amount up to three million dollars. A. M. HUFFMAN COMPANY, Claremore, Oklahoma.

BUSINESS OPPORTUNITIES

WANTED: MANUFACTURER and Distributor for the Improved Roll Boomer on a royalty basis or outright purchase. This load binder has many improvements including more take-up, more power and a safety feature. Although established, it needs more distribution. It is fully covered by patents. Nolan Sales Corporation, Tulsa, Okla.

URANIUM Claims for Sale. In the Beaverlodge Area, Uranium City, Canada. If interested, write—Mr. Joseph Nastasi, 4711 Dell Avenue, North Bergen, N. J. Telephone—UNion 6-2500.

DEALERS-INVESTORS—acreage ahead of drill making big profits. Stands investigation. References. E. M. Adams, Marshall, Texas.

FOR SALE BY ALASKANS

Stock in an Alaskan Corporation with leases on 66,560 acres of government leased ground, unitized in one block 90 air miles from Phillips Petroleums recently acquired property in Alaska. $1.00 per share non-assessable. Once oil is discovered the opportunity for investment is beyond the capacity of the small investor. Each certificate shall be for 100 shares or more.

BROKERS SOLICITED

ALASKA OIL AND GAS DEVELOPMENT CO.
Box 2000
(Please use air mail)
Anchorage, Alaska

ARE ORDERS HARDER TO GET?

If you need greater sales FORCE in selling the petroleum industry, let's discuss your problems.

We have efficient, hard hitting graduated petroleum "sales" engineers backed by top flight management specialists who are trained in the sale and service of specialty drilling products in the U. S. and Canada.

For an interview at your convenience please write or see us at the Tulsa Oil Show.

Box G-473

The Oil and Gas Journal

Tulsa, Oklahoma

WILDCAT COMPLETIONS

(Continued from page 506)

Russell County: Stearns Drilling Co. 1 Fink, SW SE SE 8-12s-14w. Dry. TD 3,369 ft.

* Seward County: Jomilson 1 Long, C NW NW 33-34s-31w. IP 483 M.c.f. of gas daily, Chester 5,959-86 ft. TD 6,802 ft. (Opens Blue Bell pool.)

Stafford County: Petroleum, Inc. 1 Fritzmeyer, SW SE NW 33-22s-11w. Dry. TD 3,681 ft.

Pam-Kar 1 Rixon, SE SE SW 7-24s-13w. Dry. TD 4,193 ft.

Ferrell Drilling Co. 1 Ahser, NW NW NE 10-24s-13w. Dry. TD 4,055 ft.

Trego County: Aurora Gasoline Corp. 1 Hixson, SE SE NW 32-11s-23w. Dry. TD 4,530 ft.

Sohio Petroleum Co. 1 Loflin, SE SW SW 27-13s-21w. Dry. TD 4,150 ft.

NEBRASKA

Kimball County: Miracle & Fifer 1-A State, NW NW NW 36-13n-54w. Dry. TD 6,070 ft. Skull Creek 6,062 ft.

J. H. Gilliam 1 McGowan, SW SW SW 2-14n-54w. Dry. TD 6,230 ft.

NORTH DAKOTA

Bottineau County: Lion Oil Co. 1 Hilmer Erickson, C NW NE 32-164n-78w. Dry. TD 5,824 ft. Red River 5,733 ft.

Foster County: T. M. Evans 1 Bailey, C SW NE 26-145n-62w. Dry. TD 2,867 ft. pre-Cambrian 2,859 ft.

CALIFORNIA

* Glenn County: Sunray Oil Corp. 1 Estes, NW NW 19-19n-1w. IP 3,500 M.c.f. daily, 29/64-in., perforations 3,653-3,665 ft. TD 3,698 ft. (New field discovery 3 miles northwest of Afton gas field at Bee Hive Bend.)

Kern County: Ferguson & Bosworth 1 San Francisco, 34-27s-19e. Dry. TD 2,300 ft.

Trico Oil & Gas Co. 2 Behlow, 10-30s-29e. Dry. TD 5,500 ft.

Elmer Knotts & Assoc. 2 Zanetti, 17-28s-28e. Dry. TD 3,762 ft.

Richfield Oil Corp. 25-28 San Emidio A, 28-11n-22w. Dry. TD 3,311 ft.

H. H. McGee, Opr. 18-A Jackson, 2-30s-21e. Dry. TD 2,010 ft.

Standard Oil Co. 11 KCL-31, 1-29s-26e. Dry. TD 5,045 ft.

Golden Bear Oil Co. 1 Smoot, 6-28s-29e. Dry. TD 1,800 ft. in Veddar at 1,794 ft.

Superior Oil Co. 44-29 Theta, 29-28s-20e. Dry. TD 1,818 ft.

Los Angeles County: P. W. Trousdale & T. K. Sterling 1 McNally, 23-3s-11w. Dry. TD 9,146 ft.

Merced County: Wm. R. Whittaker Co., Ltd. 1 Whittaker-Murietta, 23-9s-10e. Dry. TD 6,000 ft.

Santa Barbara County: DeWitt Langford 2 Hollister, 34-5n-33w. Dry. TD 1,080 ft.

Sutter County: Richfield Oil Corp. 3 Buttes-Ward, 3-15n-1e. Dry. TD 3,400 ft.

Standard Oil Co. 1 Rossi, 15-12n-2e. Dry. TD 5,350 ft.

Ventura County: Macmillan Petroleum Co. 1 Albertson, 15-1n-18w. Dry. TD 4,864 ft.

WYOMING

Johnson County: The Chicago Corp. and Republic Natural Gas Co. 1 Harlan, NE NE NW 4-42n-83w. Dry. TD 2,400 ft. Madison 2,246 ft.

Fremont County: John F. Camp 3 Government, SE NW SW 26-33n-93w. Dry. TD 2,679 ft. Muddy 2,637 ft.

UTAH

Wesatch County: Sinclair Oil & Gas Co. 1 Coleman, NE NE SE 13-2s-10w. Dry. TD 10,000 ft. Currant Creek 5,545 ft.

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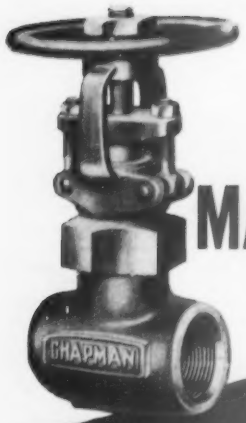
828.82 acres of Tribal and 2,786.60 acres of Allotted Indian Lands located in Twp. 11 N., R. 21; Twp. 12 N., Rges. 20 & 21; Twp 13 N., Rges. 20 & 21 E., BHM, in the Cheyenne River Reservation, South Dakota, are being advertised for oil and gas leasing, bids on which will be opened May 26, 1953, at 2:00 PM, C.S.T., at the office of the Superintendent of the Cheyenne River Indian Agency, Cheyenne Agency, South Dakota. Full descriptions and copies of the advertisement may be obtained from the Superintendent, Cheyenne River Indian Agency, Cheyenne Agency, South Dakota, or from the Oil and Gas Supervisor, U. S. Geological Survey, Federal Building, Casper, Wyoming.

LEGAL

U. S. DEPARTMENT OF THE INTERIOR, Bureau of Land Management, Washington 25, D. C. Notice is hereby given that approximately 27 acres of federal-owned land in SW¼ sec. 4, T. 30 N., R. 11 W., N.M.P.M., within the known geological structure of the San Juan field, San Juan County, New Mexico, will be offered for oil and gas leasing in one parcel to the qualified bidder of the highest cash amount per acre, at 1 p.m., E.S.T., on June 10, 1953, when bids will be opened. Under the lease, the lessee may not use the surface of the land and the privilege to drill for, mine, extract and remove the oil and gas deposits will not include the surface of the land; such privilege will have to be exercised solely by commitment of the lease to a unit or drilling agreement or by directional drilling of wells situated on adjoining lands. Details of the lease offering, how and where to submit bids, and a copy of the form or lease to be issued may be obtained upon request from the office of the Oil and Gas Supervisor, U.S. Geological Survey, Federal Building, Roswell, New Mexico, or from the Washington office of the Bureau of Land Management, Marion Clawson, Director.



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